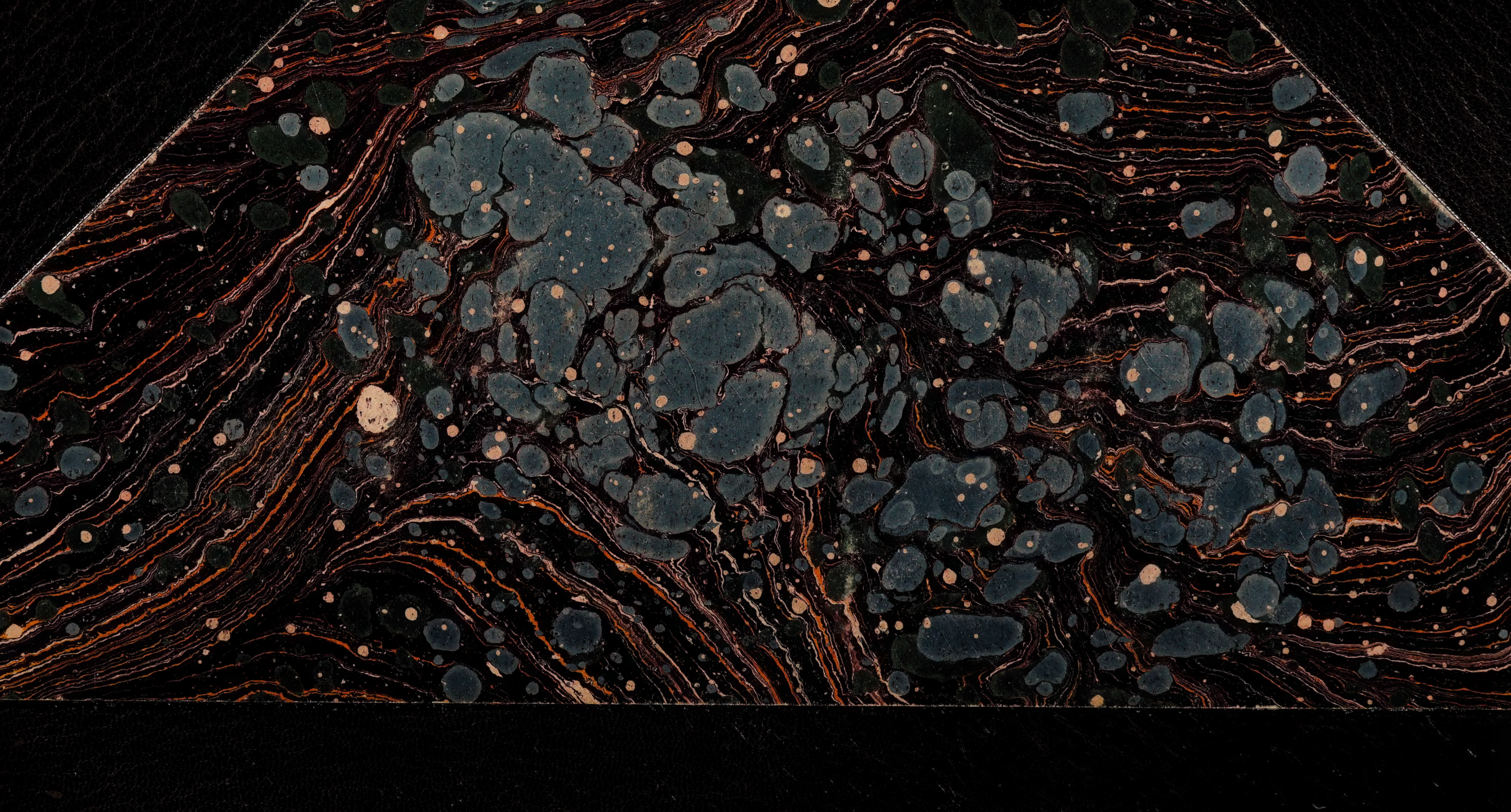

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ANDERSON'S

QUARTERLY JOURNAL

OF THE

MEDICAL SCIENCES.

BEING A NEW SERIES OF

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AND SURGERY.

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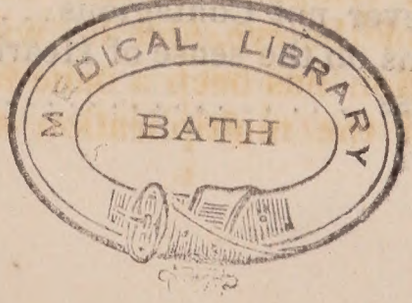

ANDERSON'S

QUARTERLY JOURNAL

OF

Medicine and Surgery.

Nº. I. JANUARY, 1826. Vol. III.

Art. I. *A Treatise on the Diseases of the Eye, including the Doctrine and Practice of the most eminent modern Surgeons, and particularly those of Professor Beer.* By George Frick, M.D. Ophthalmic Surgeon to the Baltimore General Dispensary. 8vo. pp. 320, Baltimore, 1823.

Dr. Frick has in this excellent little volume supplied a book that was much wanted—a manual of the surgery of the eye, embracing in a condensed form and in a small compass, the recent improvements of Beer, Langenbeck, Schimdt, Weller, Wardrop, and Travers. The author has come to his task with every qualification for its faithful performance—for he is not only a pupil of Beer, and we believe of Scarpa also, as well as of some of the most eminent British surgeons, but, from his professional situation, he has had the best opportunities of ascertaining by daily experience the principles he has imbibed from his celebrated European masters.

We take this opportunity of protesting against the introduction into this country of the barbarous names which the German surgeons have so extravagantly lavished on every minute shade and variety of disease. We trust more economy will be displayed here; but if any one doubts the propriety of it, let him, if his guttural organs are sufficiently flexible to enable him to pronounce them, and he is hardy enough not to fear their effect upon his teeth and tympanum, read the index to any of their works on diseases of the eye, and he will be convinced. If a rage for generalization has been a bane to science, the rage for minute division and the multiplication of names has not been

less so. It retards science, by rendering it necessary for the student to learn a new language for every department he studies —it deters him by the copious array of words which it presents —and occupies time in acquiring the barren knowledge of words, which should be spent in collecting ideas. We object, too, to the pedantry of translating phrases into a foreign language, especially when we have in our own, words equally expressive.

He evidently possesses a cultivated and well disciplined mind, and appears to be familiar with most of the writers on the eye, particularly the German. We feel, therefore, much indebted to him for making us acquainted with their writings. The Germans have excelled in this department of medical science—their works are but partially known in this country, and their being in a language not often studied, will prevent their being diffused —we trust, therefore, that our author will accomplish the design he at one time entertained, of presenting to the public a translation of the work of the venerable Professor Beer. We possess, in our language, no elaborate systematic work on these diseases, and the treatise of Dr. Frick, as the author modestly remarks, claims no pretensions as such, it being intended simply as a manual for those who are just entering upon the study of the diseases of the eye.

Our author arranges his subject under four general heads. The first includes the various forms of inflammation of the eye; the second, the effects or sequelæ of this inflammation; the third comprehends the various diseases of the appendages, and the fourth, such diseases as attack at the same time several or all of the tissues of the organ. We shall not attempt an analysis of the entire work; since, to do justice to it, would require more space than we can devote to the subject, and would, perhaps, be unnecessary; for we trust that the work itself will be in the hands of every one who feels any interest on the subject. It is the only short treatise on this subject accessible to students; and we hope we have said enough to convince them that the subject is one that ought no longer to be neglected. We proceed to notice the more important diseases.

Ophthalmitis.—This affects equally all the optic membranes; exhibiting, in addition to the usual characteristics of general inflammation in other textures, great sensibility to light, and an increased flow of tears. After the occurrence of pain, the sclerotica is seen to be slightly red, the eye is dry, hot, and moves with difficulty in its socket, owing to the distended state of its conjunctival covering. The pain is at first lancinating through the eye-ball and orbit, but becomes throbbing as sup-

puration approaches—the redness is diffused, and there is a solid deposit of lymph in the palpebral conjunctiva, producing the *chemosis* of English surgeons. Dr. Frick, in a note, draws an obvious distinction between the turgescence of the membrane and sugillatio—an extravasation of blood from external violence: the colour of the latter being of a deeper red, from the coagula it contains. As the inflammation proceeds, the neighbouring glands, which were primarily stimulated to increased secretion, become dry, but towards the termination of the disease they pour forth an increased quantity of matter; as the second stage approaches, an effusion of blood, or pus, frequently takes place in the chambers of the aqueous humours, and if to any extent, is accompanied with high sympathetic fever, and total destruction of the organ. In enumerating its various causes, our author particularizes derangement of the digestive organs—atmospheric changes—the presence of foreign bodies—and the propagation of the inflammation from the brain itself, through the medium of its tunics investing the optic nerves. The conjunctival coat of the eye being a similar and continuous membrane with that lining the intestinal canal, satisfactorily explains their existing sympathies. No state of atmosphere predisposes more to ophthalmia than the conjunction of heat with moisture: hence the worst kinds arise in warm climates, from exposure to the night air.

Treatment.—This is modified by the nature of the exciting cause, the removal of which is primarily indicated. Should a febrile disturbance of the constitution exist, general and local blood-letting is to be premised, followed by saline cathartics and antimonials. Great difference of opinion exists as to the mode of detracting blood by leeches. Ware prefers their application to the temple. Vetch to the lower lid. Our author adopts the practice of Beer and Scarpa in applying them over the fascial vein, as producing the most rapid abstraction of blood. It is, however, perfectly arbitrary, provided the desired effect is produced. Scarifications are not admissible during the acute stage; they should be made deep, and frequently; for which purpose the scalpel is the best instrument. Blisters are to be applied behind the ear, or to the nape of the neck, in preference to the temple; our author probably thinking, with Vetch, that they increase the action of the subjacent arterial trunks in the latter situation. Dr. Frick properly cautions against the use of stimulant collyria during the acute stage; he prefers tepid applications to cold, in which opinion he is supported by Professor Beer and Mr. Travers, on the ground that cold, being a tonic, causes a reaction with an increase of pain. In irritable

habits of a particular nature, we believe the opinion to be well founded; but we have remarked the disease to yield with equal facility under both plans of treatment. As soon, however, as the capillaries are in a state of congestion, warm applications are to be suspended, and cold lotions, astringent collyria, or stimulating ointments, are to be employed. To conclude this chapter, the two most important indications are, in the first stage, to preserve the integrity of the cornea, the appearance of which should always regulate the extent of the antiphlogistic regimen. In the second, or subacute stage, to avoid the tendency to debility in the organ favourable to the suppurative process—in the former, we have much to expect from the free use of antimonials—in the latter, from the free exposure of the eye to the dry air.

Conjunctivitis Catarrhalis.—This is a species of glandular inflammation of the eyelids, that frequently prevails as an epidemic, simultaneously with affections of other mucous surfaces, as catarrh or influenza, and is termed by Mr. Travers, a mild form of suppurative inflammation of the conjunctiva: a term, we think, preferable to catarrhal, which Dr. Frick has adopted from Beer. The first sensation the patient experiences, is an itching or burning in the borders of the eyelids, the secretions of which are entirely arrested—deep-coloured superficial vessels run in fasciculi towards the cornea. The inflammation, however, says our author, is readily distinguished from that of the sclerotica, by the rapid increase and subsidence of the vessels, which also accompany every motion of the palpebræ. He might also have added, that there is a much less sensibility to light. The sensation of grains of sand being lodged upon the eye, is accounted for by the enlargement of the conjunctival vessels; it is, however, also owing to the inflammation extending to the sclerotica. As the disease proceeds, the cheeks are excoriated by the lachrymal secretions, which, not being blended with mucus, are excessively acrid. This, after a few days continuance, is succeeded by a puriform secretion from the lids, which inspissates in flakes on the cornea, and makes it appear to the patient as if he were looking through a prism; minute pustules also form along the edges of the eyelid, called tæniæ ciliares, also at the junction of the cornea and sclerotica, and sometimes on the cornea itself. These, says our author, are probably the inflamed mucous glands of the conjunctiva, and are similar to aphthæ in other mucous membranes. Like all the varieties of conjunctival inflammation, it is frequently accompanied by disorders of the other mucous surfaces. Its principal cause may be referred to an epidemic state of atmosphere; the

disease is, however, doubtless multiplied by contagion, as is evident by the extent of its progress in schools, armies, &c.

This differs but little from that of general ophthalmia. Frequent attention to diet, cathartics, use of cold water, with removal to pure air, are usually sufficient. Should, however, the disease advance, topical bleeding, and a suppurating surface are indicated. During the second stage, astringent lotions, as the alum solution, with general tonics, will generally annihilate the disease. Its peculiarities appear to consist in its not requiring general depletion to any extent, and in its connexion with chylopoietic derangement.

Strumous Ophthalmia.—This disorder is peculiar to infants and children. Its chief characteristics are swelling and redness of the eyelids, which are generally half closed; and the greatest intolerance of light. The child generally seeks the darkest recesses of the room, and buries its face in the pillow or its mother's lap, and is constantly rubbing its eyes in consequence of the sensation produced by the acrid, pungent tears, which are constantly distilling from the half separated eyelids. The redness of the conjunctiva is unequal, the vessels running in distinct fasciculi towards, and sometimes over, the cornea, and at the end of these a small pustule frequently appears, which bursts, and becomes an ulcer.

Our author very correctly remarks, that severe antiphlogistic measures are scarcely ever necessary; that the chief attention should be directed to restoring the secretions of the body. He recommends for this purpose, the liquor ammoniæ acetatis, with vinum antimonii and a small quantity of the syrup of poppies; the ipecac. comp. in small doses; calomel and opium; and when the cornea is opake, calomel or blue pill, to the extent of slightly affecting the system; and if the disease does not yield to this plan of treatment, tonics, the best of which he thinks are the mineral acids, and, above all, the sea or shower bath.

The remedies which we have found most beneficial in this are, in the early stages leeches and calomel, with nitre and tartar emetic, and afterwards pulv. rhei and creta pp. in combination, blisters to the nape of the neck or behind the ears, kept discharging, and the ung. hydr. rub. to the eyelids. The glands along the edges of the eyelids (meibomian) are always affected in this disease, as is shown by the straggling appearance of the eyelashes, &c. We have derived the most striking benefit from the use of this ointment in these cases. The strictest attention to diet should be observed, the patient kept in a darkened room, and all bandaging of the eyes forbidden; they are invariably injurious. When there are ulcers of the cornea or nebulæ, we

have given the calomel in small doses, alone or combined with tartar emetic and nitre, with decided advantage, and we think, that we have derived benefit from the use of the nitr. argent. in solution, though our author disapproves of all topical applications.

Purulent Ophthalmia.—This is the severe form of suppurative inflammation of the conjunctiva of Mr. Travers. Our author questions the propriety of the name by which he has designated it, and prefers that of *Ophthalmo-Blennorrhœa*, on the ground that it is not satisfactorily determined whether the secretion is purulent or not. We cannot perceive any advantage Dr. Frick has gained by this nicety of distinction, and the barbarous name for it. It is well known that the properties of the secretions of all the mucous membranes throughout the body are changed during inflammation, and in this instance, the term suppurative is indicative of its rapidity, and the consequent danger attending it. The following description of the disease as it appears in infants after birth, to which our author confines himself, is so accurate, that we shall give the substance of his own words. It attacks the child between the period of ten days to four months after birth, and rarely after the second or third year. A slight redness of the palpebral conjunctiva is first perceptible, to which succeeds a slight mucous or purulent secretion from the lids; there is an impatience of light, but the conjunctiva covering the globe remains unaffected; the symptoms soon, however, become more violent, constituting the second stage of the complaint; there now exists a greater redness and swelling of the conjunctiva, and an increased purulent discharge, which is of a yellowish or grey colour, much resembling true pus; the intumescence is particularly referrable to the superior palpebræ, which is so protruded from the eyeball, as to cover entirely the lower one. Great care, says our author, is now necessary in the surgeon when examining the lids, lest the upper one become everted, in which case it is often impossible to reduce it; the pain increases, *pari passu*, with the inflammation, and like most forms of conjunctival inflammation, is periodical in its attack; an exacerbation coming on about bedtime, which is usually confined to the globe itself, though sometimes the cranium participates; occasionally a hæmorrhage takes place, from the enlarged vessels of the palpebræ, which is always attended with an amelioration of symptoms. Should the disease proceed with great violence, the cornea becomes clouded or opake, and sometimes suppurates and bursts, affording the patient a momentary relief from the distention of the organ. In ordinary cases, the cornea remains uninjured, and the

disease terminates by a viscid discharge from the eyelids, which, with common attention, soon disappears. Dr. Frick considers the above description equally applicable to the Egyptian ophthalmia, which he is of opinion, existed in England previous to the expedition to Egypt. Without entering into the controversy on this point, which, as regards practical purposes, is one of little moment, we would observe that we consider the opinion of Dr. Vetch as conclusive, who considers it a peculiar endemic, brought from Egypt by the troops, and propagated by actual contact of the discharge. It differs from the usual forms of purulent ophthalmia, in not affecting the general health, and in its attack commencing in the lower eyelid; there is also less pain than in the other species of ophthalmia. The cause which produces this aggravated form of the disease, is doubtless exposure to the night air, which, from the great heat, and heavy dews of that climate, must be particularly prejudicial. With respect to the exciting cause of the disease in infants, to which the foregoing remarks are particularly referrable, our author is of opinion, that it may be traced to the sudden change of the condition of the child, from the womb to the world, and to the atmospheric vicissitudes to which it is exposed after birth: we should deem this more probable than the commonly received opinion, that it is owing to the contact of the eyes of the infant with some acrid secretion from the vagina of the mother.

Treatment.—The first object is to arrest the inflammation, by relieving the engorged vessels; to affect this, venesection is the most powerful expedient. Dr. Frick objects to the practice of Dr. Vetch, and other English surgeons, in bleeding ad deliquium, and prefers a common bleeding, to be repeated if necessary. Membranes like the conjunctiva, admitting of great distention, although partially emptied, will readily resume their former activity, and we should thence prefer a powerful impression to be made at the onset of the disease. Free evacuations from the bowels are to be promoted, for which purpose our author prefers calomel and rhubarb conjoined with antimonials. In patients of a weak constitution of body, the discharge being profuse and ichorous, with a flabby conjunctiva, general tonics and a nourishing diet are to be substituted, which will frequently arrest sloughing of the cornea, after it has commenced. As local applications, any of the styptic solutions, as alum, or sulph. zinc. will be sufficient. Beer prefers vin. opii., and Vetch speaks highly of the undiluted liq. plumb. acet.; all these, however, act on one principle. Blisters, or tart. emetic ointment behind the ears, and the free exposure to dry air, are never to be omitted.

Gonorrhœal Ophthalmia.—The existence of this form of ophthalmia has been repeatedly affirmed and denied. Dr. Frick, although he has never seen the disease himself, thinks the testimony of such names as Beer, Scarpa, and Vetch, are sufficiently corroborative; the symptoms are similar to the other forms of purulent ophthalmia, only more violent. Two causes are generally stated as producing it; the suppression of the gonorrhœal discharge, and the communication by actual contact of it to the eye; whether metastasis ever takes place from the first cause, is questionable, and we should rather think it owing to the connecting sympathies which exist. Dr. Vetch has unequivocally proved by experiment, that it is excited in the second way, but views the frequency of its occurrence, diminished by the knowledge of the fact, that a person cannot produce the disease in himself by direct application of the virus, secreted by his own urethra, but may in another. Our author now details two cases, one by Sir Astley Cooper, the other by Mr. Abernethy, where the gonorrhœa and ophthalmia alternated with a rheumatic affection of the joints. Neither of these are, however, sufficiently clear to determine whether the conjunctiva or sclerotica were individually or jointly affected. Dr. Frick thinks, from the description of Dr. Vetch, that it must have been a rheumatic inflammation of the sclerotic coat; we confess ourselves at a loss to determine, but should conclude from the several descriptions of various authors, that in those cases where the ophthalmia arose from sympathy with the urethra, the inflammation affected the sclerotica and iris; and when it was produced by direct application of the virus, the conjunctiva and cornea were the seats of the disease. It, however, rarely occurs that the cure is to be affected by the same treatment as detailed under the head of Purulent Ophthalmia.

Rheumatic Ophthalmia and Sclerotitis.—This is rarely a primary disease, being generally metastatic of rheumatic inflammation; and from its ready extention to the iris, is chiefly known as iritis. Dr. Frick describes it as commencing with a lancinating pain in the orbit, which subsequently extends over the whole side of the head, an exacerbation taking place when the patient is warm in bed. The attack is frequently preceded by general rheumatic pain, which, as the disease locates itself, subsides. An increased redness of the sclerotica is now apparent, with intolerance of light, and an increased flow of tears. The obvious distinctions between the colour of the vessels in sclerotic and conjunctival inflammation, says our author, is, that in the former, they are of a lively carmine, or rose colour, the redness is also diffused over all the sclerotica, and is deeper situated: it

might also be added, that the vessels of the sclerotica always accompany the motion of the eye, a circumstance peculiarly characteristic. The intolerance of light is not very great until the vessels shoot over the cornea, it then becomes a most distressing symptom. As the disease proceeds, the redness is increased by the vessels of the conjunctiva joining those of the sclerotica; the cornea also loses its transparency, small vesicles form on its surface, which degenerate into superficial ulcers: these, in favourable cases, disappear with the other symptoms without leaving cicatrices. Should, at this period, the disease not be arrested, a vascular zone forms at the margin of the cornea; the pupil is now contracted, the colour of the iris towards its inner circumference being changed to green, produced, Dr. Vetch thinks, by the greater expansion of its fibres. Atmospheric changes, such as excite inflammation in similar membranes, are the causes to which this species of ophthalmia is particularly referable. Usually but one eye is primarily affected, the other seldom predisposing until towards the termination of the disease.

Treatment.—Venesection and local abstraction of blood are particularly necessary in the first stage. Our author agrees with Dr. Vetch in censuring temporal arteriotomy, on the ground that it is followed by an aggravation of the disease; the arteries rapidly accommodating themselves to the exigency of the parts which they supply. The stomach is to be cleared by an emetic, followed by an active cathartic. Although mercury does not appear to be a specific in this disease, as in iritis, its exhibition to a certain extent is peculiarly efficacious. As the skin is usually dry and hot, antimonials in nauseating doses are never to be neglected. To palliate the pain and irritability, blisters and narcotics are powerful auxiliaries. Mr. Wardrop recommends the evacuation of the aqueous humour when great tension exists, which measure our author approves. After the violence of disease has been subdued, vin. opii. is to be applied to the eye with a camel's hair pencil.

Iritis.—From the danger attendant on this form of ophthalmic inflammation, and the unerring efficacy of the remedy employed in subduing it, we consider it entitled to particular notice. Its symptoms are modified by the causes which produce it, which may be either external, or arising from a peculiar diathesis, as syphilis or gout.

Idiopathic iritis is described as commencing with an obtuse, deep-seated pain in the eye, causing a sensation as though the bulb was pressed upon from without, owing to the extreme distention of the vessels. The pupil is contracted, but retains its

circular form and central position; the eye becomes sensible to light, and there is a change of colour in the iris, which becomes either reddish or green; its margin is puckered and inverted; the vision is now indistinct, either from an effusion of coagulable lymph, or to the inflammation extending to the capsule of the crystalline lens. During the first stage, the redness of the eye is proportionately less than the other symptoms: but as the disease advances, the sclerotica is traversed by innumerable convergent vessels, which, concentrating around the cornea, form a beautiful rose-coloured zone. Here Dr. Frick takes occasion to remark, that this appearance occurs also in strumous ophthalmia, and cannot therefore be called characteristic. The pupil now becomes angular and irregular, owing to adhesive inflammation having take place between the fibres of the iris, from which projects a grey ash-coloured membrane, forming a medium of adhesion with the capsule of the lens. Ultimately an orange-coloured tubercle forms upon the iris, which suppurating, the purulent fluid it contains falls into the anterior chamber of the aqueous humour, forming the disease called hypopion. On the question whether pus is ever secreted by the iris, our author says—

"Many pathologists, and among the number Dr. Farre and Mr. Travers, have supposed the iris incapable of taking on the suppurative stage of inflammation, and account for this appearance of pus in iritis from its being accompanied with ulcers upon the cornea, opening internally; others have termed this a spurious hypopion, and suppose it to consist of effused coagulated lymph. It is very probable, that the different terminations of iritis, in adhesion or suppuration, depend upon the different tissues of the iris that are affected. Thus, if the inflammation be confined to the serous membrane covering the proper substance of the iris, coagulating lymph is effused; if, on the other hand, the cellular texture, or the substance of the iris be the part primarily attacked, we haveabscess and suppuration."

Sometimes a union takes place between the inflamed surfaces of the iris and cornea, producing staphyloma.

Iritis Syphilitica.—When iritis appears in a syphilitic patient, the cornea is uniformly obscured, but the iris is less irritable. The pupil becomes angular, and is drawn inward and upward toward the root of the nose—intolerance of light and lancinating pain in the eye-brow, increasing toward midnight and abating toward morning, attend. Coagulable lymph is effused, and when the disease is allowed to progress, reddish tubercles are seen on the borders of the iris.

Iritis Arthritica.—The characteristic feature of this variety, as distinguished from the preceding one, is, says our author, that the inflammation does not extend to the margin of the

cornea, but leaves around its edge a narrow bluish ring, which becomes more perceptible with the increasing vascularity of the conjunctiva. We should be inclined to think that this could be most readily observed during the early stage of the attack; as during the progress of the inflammation, the vessels of the conjunctiva penetrating the sclerotica, would close up the space referred to. Dr. Vetch considers the distinction between conjunctival and sclerotic inflammation apparent; but says that he has never been able to perceive any difference in the arrangement or appearance in the vessels of the latter membrane, sufficiently distinct to indicate the peculiarity of the exciting cause, or specific nature of the case.

The disease is modified by the irritability of the patient's habit, the iris exhibiting diversified appearances. As the termination, however, is always the same, unless proper remedies are employed, we will not detail them. The exciting causes enumerated are, wounds of the membranes consequent on the operations for cataract or artificial pupil, and suppression of the cutaneous secretions during an attack of gout, or a mercurial course.

Dr. Frick recommends in idiopathic iritis, "a full and free bleeding, which may be repeated in a day or two," followed by an active cathartic, and small doses of tartarized antimony; if the symptoms continue violent, "local bleeding and fomentations; and, finally, to remove the effused lymph—mercury." We are far from considering this as sufficiently energetic practice; blood should be drawn freely from the arm, and this promptly followed by topical depletion, purgatives, and application of the belladonna or stramonium. If the inflammation is not immediately relieved by these means, mercury should be resorted to without delay. It is not sufficient in this disease to be satisfied with relieving symptoms as they occur; if we do, the only opportunity of acting with effect will be lost; we must endeavour to anticipate them; if we wait till coagulable lymph is formed, it may become so organized before the mercurial action can be excited, as to resist all subsequent remedial measures. Professor Beer censures the use of the belladonna, he thinks it has a strong tendency to weaken the powers of the retina; we believe this is incorrect. Its utility is strongly advocated by all the English writers, and its application should not be neglected. It sometimes entirely prevents the irregular contraction of the pupil, and seems even to have a specific effect on the general inflammation. Tartar emetic is useful as an adjuvant, in keeping down arterial action, but must not be depended upon as fulfilling any very important indication. Di-

gitalis has been recommended, with the view of depressing arterial action, but we think it is worse than useless, as inducing the practitioner to waste time that should be employed in the application of more efficient measures.

In syphilitic iritis the treatment is nearly the same. It is not required to carry depletion to so great an extent as in the idiopathic disease, but it must not be neglected; we do not believe "the application of a few leeches to the eye to be in general sufficient," and mercury must be even earlier resorted to. Dr. Frick recommends "for the nightly attacks of pain, so peculiar to this disease, that the patient should rub into the eyebrows each night, and a short time before the pain is expected to come on, a small quantity of mercurial ointment united with a portion of finely powdered opium:" this will be found highly useful. Great relief will also be afforded by free topical depletion, which should not be neglected.

The treatment of rheumatic or arthritic iritis must depend, in a great measure, upon the predisposing cause; if connected with gastric derangement, we must endeavour to restore the healthy condition of the chylopoietic functions; in protracted cases an emetic will often cut short the disease of the eye.

Ophthalmitis interna.—This appears to be an insidious form of sclerotic inflammation, in which the tendinous expansions about the cranium largely participate. If suffered to advanee, it becomes iritis. There is little or no apparent inflammation in either the sclerotica or conjunctiva, the pupil and iris first showing the evidences of disease. It fortunately is of rare occurrence, and calls for the same treatment as iritis, only, if possible, more vigorous.

DISEASES OF THE CONJUNCTIVA.

Pterygium.—Of this affection there are two kinds, the membranous and fleshy, or, as our author calls them, the pterygium tenue, and pterygium crassum. The first is a thin film or nebula of the sclerotic conjunctiva, its figure is pyramidal, with the base towards the caruncula lachrymalis. It extends towards the cornea, having a few straight, long, and detached vessels on its surface. The latter is a sarcomatous growth beneath the sclerotica, with a tongue-shaped extremity, which is formed by the deposition of lymph in the interstices of the membrane. It is different from pannus, which is merely a chronic thickening of the conjunctiva. They are to be removed by dividing the vessels at the base with a scalpel, and afterwards dissecting off the membrane with a pair of curved scissors; when it does not, however, encroach on the cornea, Mr. Travers recommends it to be let alone, and when it does, he advises the portion which covers the cornea, to be removed by the appli-

cation of escharotics, and never to be dissected off.

Tumours of the Conjunctiva.—These occur in the cellular tissue, which connects the sclerotica with the conjunctiva: they are usually of an adipose or cartilaginous nature, and, like all excrescences of this membrane, are removed by excision; their reproduction being prevented by slight stimulants.

DISEASES OF THE CORNEA.

Opacities and Specks.—The cornea frequently becomes opake, in consequence of inflammation in the vessels covering or surrounding it; the extent of its affection being various, from a slight haze to a perfect opacity, our author has made three divisions. 1st, A condensed or increased state of the interlamellar secretion, commonly termed, nebula. 2d, The formation of a pseudo membrane, leucoma; and a third variety, that in which the lamellæ unite, albugo. Nebula usually impedes vision, but seldom destroys it; leucoma and cicatrices occupying the centre of the cornea, frequently cause total blindness. In leucoma there is a pearly opacity, which, when it occupies the centre of the cornea, so contracts the sphere of vision, as to render the patient blind, except by twilight, when the expansion of the pupil admits the rays of light through the diaphanous portion. Cicatrix, or albugo, is either the consequence of a wound or ulcer of the cornea; and when it is situated over the pupil, becomes an impediment to distinct vision. It is frequently produced by burns, or the application of corroding substances to the eye; nebulous opacity is to be removed by stimulating collyria, or ointments: of the former, the best are the solution of nitr. argent, and hydrarg. oxymur.; of the latter, our author gives different formulæ; the basis of them all is, however, mercury in some shape. In all obstinate cases a slight mercurial action should be instituted. When the plexus of vessels shoot toward the opacity, circular incisions around the cornea should be made.

Ulcers of the Cornea.—These either primarily occupy the external surface, or are interstitial, and are usually the consequences of severe ophthalmia, or chemical injuries done to the cornea. They often gradually deepen and enlarge, and penetrate the inner coat of this membrane; the aqueous humour then escapes, and the iris approximates, constituting procidentia iridis. As there is usually considerable inflammation of the conjunctiva, antiphlogistic treatment is called for. The ulcer should be touched with a solution of argent. nitr. and in urgent cases the system should be put under the influence of mercury. When the ulcer is interstitial, and the constitution feeble, tonics are to be employed, together with opiates and local stimulants.

Procidentia iridis is to be touched with an escharotic, or snipped off with a pair of scissors.

These remarks of Dr. Frick on opacities and ulcers of the cornea, are exceedingly accurate and well written, and we recommend a careful perusal of them; but his account of staphyloma corneæ is by no means satisfactory. He quotes the opinion of Scarpa, who maintains that it is caused by a "preternatural fluidity or turgescence of the vitreous humour;" and that of Beer, who thinks it depends upon a diminished absorption of the aqueous humour; and our author, himself, appears to think that it is owing to an increased secretion. We believe that it is not owing to any of these causes, but to an ulceration of the cornea.

There are two kinds of staphyloma, one produced by a dilatation of the inner lamina of the cornea, and the other by their rupture. In the first, the lamina are bulged, being so weakened by ulceration as to have lost their power of resistance. In the second, the breach caused by ulceration is filled by lymph, which is protruded in a conical form. Sometimes the two forms are combined; the inner lamina, after bulging, being ruptured in one or more points, and conical protrusions formed upon it. The pressure against the sides of the ulcer causes their absorption, and the staphyloma, which in the first instance had an appearance of a small vesicle, is thus enlarged, till it sometimes occupies the whole cornea. The deposition of lymph also takes place, and the protruded parts are very much thickened. If the ulcer is situated in the centre of the cornea, and does not extend to the edge of the iris, the inner membrane projects in the form of a vesicle, and the iris is left free; but if perforation takes place within the limits of the iris, adhesion of that part within the circumference of the ulcer takes place, and the pupil is drawn in that direction. The contact of the pigmentum nigrum gives a perfectly black colour to the point of adhesion, quite different from the colour of the iritis in situ; but as the protrusion increases, this black tinge disappears, and it acquires a bluish hue.

Mydriasis.—A permanent dilatation of the pupil is usually symptomatic of amaurosis. When idiopathic, it is consequent on blows, which induce a want of sensibility in the retina. The remedies indicated, are to relieve the disease on which it depends, or to remove the atony of the nerves by stimulating applications, scarifications, and setons, which sometimes succeed.

Myosis.—An opposite condition of the pupil here exists, and in some cases a complete obliteration is the result, which, by our author, is termed *Synizesis.* It arises either from an undue

degree of sensibility in the retina, or is the effect of iritis. Artisans, who exercise their vision on minute or glaring objects, are subject to this affection, the pupil in these cases forming a habit of contraction. It also is consequent on the operation for cataract, coagulable lymph, or a portion of the lens blocking up the pupil.

Synechia.—Is divided into anterior and posterior. The first signifies an adhesion of the iris to the cornea; the latter, to the capsule of the lens. They are both incurable when firmly established.

Artificial Pupil.—Cheselden was the first who operated in cases of artificial pupil, by making a section of the iris, and is said to have been repeatedly successful. He made use of a couching needle, with a cutting edge on one side, and divided the iris transversely. Other operators afterwards failing to succeed, owing to the closure of the wound, new plans of operating were devised. Among the most important of these, are the following:—That of Wenzel, who made a semilunar incision through the cornea and iris, and then cut away a small portion of the latter by introducing a delicate pair of scissors through the aperture.—Great inflammation and entire destruction of the organ sometimes accompanying this mode, Mr. Gibson, of Manchester, practised the evacuation of the aqueous humour, and the excision of such part of the iris as protruded itself. Scarpa tore the iris from its ciliary attachments, but great hemorrhage is usually the result. The operation, in whatever way performed, is far from being uniformly successful. The pupil should always be made at a point where the cornea is transparent, and the operation is contra-indicated when one eye is sound, or when, from appearances, a diseased state of the inner membranes or humours exist.

Amaurosis.—This affection may be either organic or functional. The vision is not always wholly interrupted, the patient being enabled to distinguish large objects. He first notices his sight to be interrupted by small bodies floating before the eye, called muscæ volitantes; or when reading, the letters of the book appear transposed. Again, there is an oscillation of objects, or double vision. Light affects amaurotic persons differently, some being unable to bear the stimulus, others seeking it. It may be sudden or progressive in its attack, according to the nature of the exciting cause. The morbid characteristic in either case, is the pupil no longer obeying the stimulus of light; its circular form is somewhat changed, and there is a coloured spot in the fundus of the eye, as in the horse or sheep. Severe pain in the orbit and temples is an attendant symptom. When any of the other senses are affected, there is but little prospect of a

recovery. It most frequently occurs in middle-aged persons with dark eyes. The exciting causes are undue exercise of the eye, a long residence in dungeons, mines, &c. It is also a consequence of long disease, especially where the nervous system has been particularly affected, the indulgence of depressing passions, and profuse discharges of any kind; the exhibition of narcotic substances in excess, as opium, belladonna, &c. Another cause, says our author, which is but little noticed, is a deficiency of the pigmentum nigrum. This is necessarily incurable. A disordered state of the abdominal viscera is perhaps a more frequent cause than any above enumerated. Idiosyncrasy of diet, also, sometimes produces it. Beer saw a case occasioned by the use of chocolate. The prognosis is always the most favourable when the attack has been sudden. When one eye is affected, the other soon becomes so. Dr. Frick considers the prevalent opinion, of the disease being most readily cured when the pupil is least dilated, as erroneous.

Treatment.—This is almost exclusively constitutional, and is confined to improvement of the secretions, generally; particularly those of the digestive organs. The blue pill as an alterative, followed by bitters, with healthful exercise, are the most important means. Under local remedies, may be included abstraction of blood from the organ, and blisters or tart. emetic ointment behind the ears. All other topical remedies, including galvanism, the application of irritating substances, &c. are worse than useless. Under the head of depletion, it may be remarked, that there is an atonic state of congestion in the vessels of the eye, which general or local blood-letting only aggravates.

Cataract.—We can but glance at the pathology and treatment of this important disease, to which our author has devoted nearly seventy pages of his work, and to which we refer our readers for much useful and interesting information. The opacity may be either in the crystalline lens, or in the capsule. In the first case, it is esteemed lenticular; in the latter, capsular. During its incipient stage it may be mistaken for amaurosis. Several varieties are enumerated. *Hard Cataract.*—Here the lens is smaller than natural, and of a dull white or horn colour, the nucleus or centre being dark. *Caseous Cataract.*—Greater loss of vision here occurs, the lens being much enlarged, and of a flocculent appearance. *Lacteal Cataract.*—From its colour, resembling skimmed milk. This is mere change of density in the lens. *Capsular Cataract.*—When both the anterior and posterior capsules are the seat of disease, the vision is completely destroyed. When the anterior is alone opake, the cataract is unusually convex; when the posterior, concave. Many complicated varieties of this form are now detailed, such as the

cataracta capsulo-lenticularis; cataracta capsulo-lenticularis cystica; cataracta capsulo-lenticularis cystica tremula and natalis; cataracta arida siliquata, and cataracta capsulo-lenticularis cum bursa ichore continente. Be not alarmed, reader, by this list, the names are its only novelty, they are merely varieties of the four first mentioned species, as are the very many others described by the German writers, all of which are distinguished and dignified by equally appropriate appellations, but which the good sense of Dr. Frick has frequently prevented his noticing.

Dr. Frick has noticed some of the complications of cataract: the most important of these is with amaurosis. It is exceedingly difficult, in some cases of cataract, to ascertain whether or not there is paralysis of the retina. Dr. Frick remarks, "a widely dilated pupil, and immoveable iris, were at one time looked upon as infallible criteria of this complication; but these symptoms are often caused by nothing more than the mechanical pressure excited by the lens, and are by no means constant and necessary symptoms of amaurosis. If, however, there be connected with these appearances of the iris, evident atrophy of the eye, or if the patient be unable any longer to distinguish light from darkness, we may pronounce with certainty that there is amaurosis."

Dr. Frick adds a valuable caution; viz., that the surgeon should never rely in any instance upon the simple *ipse dixit* of his patient, but examine most scrupulously for himself. Ask a person labouring under blindness from cataract, or any other cause, whether he has any sensation of light? and he will answer, most unequivocally, "No! I am stone blind." Yet direct the same individual to fix his eye upon the window, the fire, or any luminous object, and intercept the rays of light, by moving the hand, or any opake body, between the eye and object, and he can distinctly tell you.

The proximate cause of cataract is involved in much obscurity. Dr. Frick has, however, given a very good account of these causes as far as they are known. Professor Walther entertains some very curious and original notions on this subject, which our author has not noticed, and which we think are sufficiently interesting to be mentioned here. He thinks that cataract is the primitive and natural state of the lens, and that congenital cataract is not, therefore, an altered, but an unaltered condition, in consequence of a check given to the development of the embryon; and that, like other malformations, it is not owing to the influence of any active or formative cause, but having been originally present in every embryon at certain periods of its ex-

istence, does not disappear in its progress to a more perfect state, as it does when this progress is unchecked.

With respect to the propriety of operating for cataract, when one eye only is affected, the other remaining sound, much difference of opinion exists, even among the best surgeons. The respectability of the surgeons ranged on each side are so equal, and the reasons urged by each for their opinions so nearly balanced, that it is not a little difficult to come to any conclusion: under such circumstances, the experience of every one must be his guide. For our own parts, we think that in a majority of cases, it is inexpedient to operate; but we confess our experience is not such as to induce us to urge this opinion with very great confidence. Dr. Frick has not given his own sentiments, but quotes those of Baron Wenzel and Mr. Travers, who are advocates for its immediate performance. But we might mention that many disapprove of operating under these circumstances. Dr. Frick has described the method of operating for cataract now in use, and given many excellent directions, which are well worthy of being attentively studied.

Dr. Frick believes "that the ancients had very crude notions respecting the nature of this disease;" that they "supposed it nothing more than an adventitious membrane, filling up the pupil;" and that they knew no operation except couching; but we think that it can be proved that justice has not been done them in this instance—and that the operation for extraction was practised by them; they were of course acquainted with the true seat of cataract.

Antyllus, who lived at the end of the first century of the Christian era, describes very minutely this mode of operating. First, he cut the transparent cornea; then passed through the pupil into the crystalline lens a fine needle, which he turned lightly, in order to draw the lens out through the opening. He dressed the part with oil of roses, and white of egg, and ordered the patient to remain three or four days on his back, with his eyes closed.

It appears, that about the same period, dissections made known the true seat of cataract. In fact, Rufus, of Ephesus, distinguished *glaucoma* from *suffusion*, considered the seat of the first to be in the crystalline lens, and regarded the second as the effect of the coagulation of a humour between the transparent cornea and crystalline lens.

Moreover, Avicenna, and the Spanish surgeon Abu'l Kasem, in describing their method of couching, speak distinctly of its object being the depression of the crystalline lens; of course they must have considered it as the seat of cataract. Among

the surgeons quoted by Rhazès, is a Greek, named Lathyrion, who operated for the extraction of cataract in the same manner as Antyllus. The Persian, Ali, son of Abbas, treats minutely of the extraction of cataract, as well as of the depression. Avicenna mentions that the operation for extraction was very often performed in Persia, but he was not in favour of it, as it often occasioned the loss of the humours of the eye. Avenzoar believed the extraction of cataract possible; and Isa-ebn-Ali, a celebrated Arabian oculist, points out, from hearsay, the manner of performing the operation of extracting the crystalline lens, but he considers that it is much easier to describe than to perform it.

We thus see that the Greeks and Arabians were acquainted with the true seat of cataract, and practised extraction as well as couching; but the oculists of the middle ages were totally ignorant of what had been done by their predecessors. The accurate ideas entertained by the ancients of the seat of this affection sunk into oblivion, and cataract once more was supposed to be owing to a pellicle stretched behind the pupil.

At this period, the operations on the eye were abandoned by the surgeon to wandering quacks, and the only operation they performed, or were acquainted with, was that of couching. The ignorance which prevailed in relation to cataract continued till the latter end of the seventeenth century, when the true seat of the disease was ascertained, and the operation of extraction again devised.

From the various and complicated nature of cataract, Dr. Frick remarks, "it is difficult to lay down any precise or established rules with regard to the particular mode of operating in each case, and much must be left to the judgment, discrimination and experience of the surgeon, in determining the choice of his operation. It is in vain that certain writers would attempt to argue, that either mode can be adopted indiscriminately in all cases, or that by any newly invented or improved method, any single operation may be rendered applicable to all the varieties of cataract." We perfectly agree with our author as to the correctness of these observations, at least so far as respects extraction and keratonyxis, or cutting through the cornea. Both operations are good, but they are applicable to different cases, and no comparison of their respective advantages should be made. As to couching, we are not sure that it is preferable in any case; we speak in reference to the patient. It is the easiest operation to perform, and is, perhaps, less liable to be followed by dangerous consequences, when performed by a bungling operator, than the others; for the same reason, couching through

the cornea has been preferred to the perforation of the sclerotica. The objection we have to the operation, is the violence that is done to the vitreous humour and hyaloid membrane, which must be broken down to give place to the depressed lens, thus producing the symptoms of disorganization, congestion of vessels, turbid humours, flaccid tunics, palsied iris, and often amaurosis, from pressure on the retina; and the sight, frequently, does not improve after the immediate effects of the injury have passed away, but remains dim, or is gradually lost altogether. From this view of the subject, it is evident that the method of couching by *reclination*, proposed to obviate some of the bad effects of depression, is worse than the old method, as more violence is done to the delicate structure that fills the globe of the eye.

The operation of extraction is the most perfect that has been devised; but it is not applicable to all cases. The objections that have been urged against it, are derived principally from its unskilful performance, and do not apply to the principle of the operation. "If the corneal section be clean, and situated midway between the pupillar edge and the margin of the cornea, or a little nearer to the latter, if it be of such extent as to allow of the perfectly easy escape of the lens, if the conjunctiva, sclerotica, and especially the iris, be untouched, and the capsule freely lacerated, without lesion of the vitreous capsule, then the operation is perfect." But if it is not so skilfully performed, the unpleasant results of the operation have been greatly magnified.

"When the lens adheres in some parts of its surface to the iris; where the cornea is very flat, and the anterior chamber of the eye so much diminished, that the section of the cornea cannot be made sufficiently large to admit of the passage of the lens; where this tunic presents the appearance denominated arcus senilis, as the wound made under these circumstances never heals; where there is present a habitual contraction of the pupil (myosis); where the eyes are seated deep within the sockets, and the eyelids cannot be opened to a sufficient distance; where adhesion has formed between the iris and cornea;" and especially in the cataract of children, the operation of *division of the lens* is to be preferred.

Glaucoma.—A disease of the vitreous humour, exhibiting a sea-green colour. Incurable.

Synchisis.—Solution or diminished bulk of the vitreous humour. This is frequently a sequela of the excessive use of mercury, and terminates in a complete atrophy of the organ.

Dropsy of the Eye.—This arises from an increased accumulation of either the aqueous or vitreous humours, as in

staphyloma, the eye-ball protrudes beyond the orbit. In urgent cases, paracentesis is to be performed, and the aqueous humour evacuated.

Pure Inflammation of the Eyelids.—The cellular texture of the palpebræ is subject to inflammatory action, which usually commences in the upper lid, but ultimately extends to the lower, and involves the lachrymal and Meibomian glands, and unless arrested, terminates in suppuration. It is to be treated by topical bleeding and cold lotions, and when matter forms, it is to be evacuated by the lancet. Should fistula ensue, tonics are to be given.

Erysipelatous Inflammation of the Internal Canthus.—This assumes the appearance of erysipelas in other parts, and is to be treated on the same principle.

Psorophthalmia.—This, says Dr. Frick, is always induced by the poison of the itch directly applied to the eyelids. Small pustules appear round the margin, and the roots of the cilia are often destroyed. The eye is to be washed with tepid applications, and any of the ointments usually employed in psora made use of.

Hordeolum.—This is a phlegmonous tumour of the eyelid. At the commencement of its attack, resolution is to be attempted by cold applications, and when matter forms, it is to be evacuated. Should induration remain, ung. mercuriale is to be applied.

Granular Conjunctiva.—A very frequent termination of purulent ophthalmia is in a granulated state of the palpebral conjunctiva, which, acting like a foreign body, produces constant irritation, inducing frequently nebula of the cornea. Local bleeding by leeches is first to be employed, and if insufficient, sulph. cupri is to be applied, and the surface immediately afterwards washed with a pencil dipped in water.

Trichiasis.—The cilia, or the whole tarsus, are here inverted towards the globe. In the former case, the hairs are to be pulled out by a small forceps; in the latter, a fold of the tarsus is to be removed by a pair of scissors.

Ectropion.—This is the reverse of the former disease, and is to be cured by excision of a fold of the conjunctival lining.

Paralysis of the Eyelid.—This is to be treated by local stimulants and blisters.

Concretions of the Eyelid.—An adhesion here exists between the eyelids and globe. The remedy is division of the connecting fibres.

We have thus given a minute analysis of the most valuable parts of Dr. Frick's Manual, and we have the gratification to

announce that the work has been just reprinted in London, with notes by Mr. Welbank, whose work on Syphilis we lately reviewed. We shall take notice of these notes in a future Number, and in the meantime we conclude by recommending the work of Dr. Frick both to the student and the practitioner, as the most valuable text book that has yet been published on diseases of the eye. In the above paper we have made free with several Transatlantic reviews of Dr. Frick's work.

ART. II. *Observations on the Surgical Anatomy of the Head and Neck.* By ALLAN BURNS. With a Life of the Author, and Additional Cases and Observations. By GRANVILLE SHARP PATTISON, Professor of Anatomy in the University of Maryland, &c. &c. Second Edition. Glasgow, 1824.

It is unnecessary that we should expatiate on the excellence of the original work of Mr. Burns, which stands a solitary and unrivalled specimen of the manner in which surgical anatomy should be treated of. A full analysis of its most important points will be found in a former series of this Journal, to which we may refer those of our readers to whom its value is still unknown. Our business at present is with Mr. Pattison, who has too long escaped our attention.

Mr. Pattison states himself to have been the pupil and closely attached friend of the late Mr. Burns; the latter having bequeathed to him the copyright of all his works. He adds that it is his intention to publish, in a series of volumes, the surgical anatomy of the whole body, on the plan of the present, a new volume to appear every Autumn, until the system be completed. This promise is dated at Baltimore, in 1823, but we are not aware that any part of it has, as yet, been fulfilled.

The Editor's contributions to this volume consist in a life of the author, a few occasional notes, and an appendix. Of the life, little is to be said: it is in vain to flatter ourselves, but the history of the most diligent anatomist, or the most able physician, is too trivial, too monotonous, to afford much scope to the biographer, or much interest even to those of the same profession. We are all inclined to think ourselves and our proceedings of much more importance than they really are; we deceive ourselves into the belief that the eyes of the world are exclusively directed to exertions, in themselves equally valuable and praise-

worthy, but to which the bulk of mankind are totally indifferent, if it should even happen that they are in any way informed of them. Unfortunately, too, it often happens that when time and experience have set us right on this point, languor and disgust succeed to the ardour of ambition, and the mind, deprived of its most powerful incentive to application, sinks into apathy, indolence, or cynical disgust.

As to Mr. Pattison's notes, they are as scanty and as trivial as can be imagined; we believe the total number does not reach a dozen, and even in these it is not always that he has understood Mr. Burns, or that his opinion is worthy of notice. Thus, at page 54, Mr. Burns, in discussing the question, how far it may be supposed that swellings of the lymphatic glands in the vicinity of specific tumours, arise merely from irritation or from an extension of the primary disease, and suggesting the test of ulceration as the means of discrimination, says—

"We are by no means to infer that a secondary tumour is sympathetic, merely because the primary one has not ulcerated externally; this is really no proof. After the removal of the latter, we are carefully to examine whether there be any fungi, or ulcerated points in its centre. If these existed, I would incline to the belief that the secondary tumour was specific, and would therefore, without hesitation, advise its removal; but if, after a minute inspection of the primary tumour, no traces of fungi or ulceration could be perceived, I *do not know* how far it would be advisable to extirpate the secondary."

It is evident that Mr. Burns does not lay this down as an established principle, but merely offers it as a suggestion for further consideration. Mr. Pattison, however, looks on it as the expression of a decided opinion, and refutes it accordingly.

"The Editor's observations lead him to differ from the opinion expressed by Mr. Burns, as to its being necessary that ulceration or fungus shall have taken place in the primary affection, before the secondary one can become specifically contaminated."—"The rule of practice which his experience would induce him to inculcate, would be, in every case, before performing an operation for the removal of a tumour, supposed to be of a specific character, to examine carefully those glands, which receive their lymphatics from that situation; and should any of them be found enlarged, to remove them at the same time that we extirpate the primary tumour."

We find fault with Mr. Pattison for misunderstanding his author's meaning, and not for the principle which he has here laid down. On the latter point we perfectly coincide with him, and for the same reasons, viz. the results of actual dissection.

Again, we find him, at page 394, advising, as a general practice, that the temporal artery should be tied after taking blood

from it, in preference to dividing it, or applying a compress and bandage. Every thing that we have ever witnessed leads us to believe that such treatment must nearly always be injudicious, and unnecessarily severe.

The appendix contains some cases of such interest, that we cannot but regret that Mr. Pattison should have added so sparingly from his own stock to the valuable materials of his master. The first case is one of aneurism of the aorta, which escaped observation during the patient's lifetime. The principal symptom was pain, supposed to be rheumatic, at the lower part of the neck. The patient died rather suddenly of apoplexy.

"On opening the chest, the nature of the original disease was at once exposed. There arose from above the arch of the aorta a large tumour, which, projecting sternally, adhered firmly to the spinal aspect of the sternum. Upon separating this connexion, we discovered that the tumour was formed by an aneurism of the arteria innominata, and that the sternum, where pressed on, had become carious. The transverse veins formed by the union of the left subclavian and jugular veins, presented a very uncommon appearance. It had more the character of a ligamentous cord than of a distended vessel; and when opened, it was found filled with coagulable lymph, which completely obliterated its cavity. Being curious to ascertain the cause of this, I traced it carefully downwards towards the right auricle. Upon arriving at the sternal aspect of the aneurismal tumour, the vein terminated; that portion of it which crossed the tumour having, from pressure, become obliterated. The tumour measured four inches in its transverse diameter, and three in its longitudinal. The depth of the sac, from its spinal to its sternal surface, was two inches and three-quarters. From its situation, it completely covered and concealed the trachea and gullet. The whole length of the arteria innominata was involved in it; and those arteries into which the vessels naturally divides arose separately, as independent branches from the spinal aspect of the aneurismal sac. Both the superior and inferior thyroideal veins were enlarged and distended with blood; they appeared to be the channels through which the venous blood, from the left superior extremity and left side of the head and neck, was conveyed to the pulmonic auricle."

The remarks suggested to Mr. Pattison's mind by this case, are 1st., the singularity that such a derangement of the arterial system should remain undiscovered, during the patient's lifetime; 2d., that although situated in front of the trachea and gullet, having obliterated the transverse vein, and rendered the sternum carious by its pressure, it should have caused no symptoms of pressure on the two first mentioned parts. As to the absence of pulsation at the lower part of the neck, Mr. Pattison is sceptical; for as the thyroid margin of the tumour was in contact with the sternal margin of the thyroid gland, he

is satisfied that pulsation must have been observed, if the examination had been conducted with attention.

Dr. Mott's case of Ligature of the Arteria Innominata need not detain us, as a verbatim account of it has already appeared in the pages of this Journal.

The next case is one of Aneurism by anastomosis in the branches of the internal maxillary artery, for the cure of which, Mr. Pattison tied the common carotid with success. The patient, aged eighteen, consulted Mr. Pattison in April, 1821. The disease first appeared in the cheek, in 1813, and was, after some doubt, pronounced to be polypus. Two operations were performed under this impression; the first with a ligature and forceps through the nostril. The cheek soon after beginning to swell, it was imagined the polypus arose from the antrum, and the second operation was performed, by laying open the antrum with a trephine, and attempting to cut out the tumour. The bleeding, however, was such, as soon to stop the operation, and reduced the patient so much as to confine him to his bed for some weeks. The disease gradually increased, and was now attended by frequent and profuse bleedings from the slightest causes. The left cheek, the seat of disease, was always warmer than the other, and was much more easily affected by exposure.

When Mr. Pattison first saw the patient, the tumour was very large, its centre occupying the situation of the antrum: pressing upwards into the orbit, it protruded the eye; nasally, it passed into the nostril of the left side, filling it completely, and giving a general character of distortion to the nose. The tumour, which in size was nearly equal to the head of a new born child, extended from the left margin of the nose, to the line which is marked on the neck by the tracheal margin of the sterno-mastoid muscle.

The first idea entertained by Mr. Pattison was that of polypus of the antrum. He was first enabled to detect its true character, by pressing the tumour between the fingers, one having been introduced into the mouth, and another placed on its external surface. "As thus examined, the distinguishing character of anastomosing aneurism was at once detected, that peculiar pulsatory throbbing, which characterizes them from all other affections, being distinctly felt." With the consent and approbation of the other professional gentlemen concerned in the case, Mr. Pattison tied the common carotid. Immediately after the operation, the appearance of the tumour, as it presented itself in the nostril, became remarkably changed; just before it seemed distended, even to bursting; but so soon as

the direct circulation was cut off, its distention was destroyed, and it became shrivelled on its surface. The pulsation which previously existed could no longer be discovered.

The subsequent progress of the case was equally satisfactory; the bulk of the tumour was rapidly diminished, and, notwithstanding the destruction it had produced, the degree of deformity was much less than might have been anticipated, and at the end of two years and a-half, so trifling as to be hardly perceptible.

The subject of the next article of the appendix, is one of the most striking that it contains, and if it should happen that the practice there suggested should stand the test of experiment, must be considered as a most important addition to the resources of operative surgery. The intractable nature of tumours arising from the antrum, must hitherto be generally admitted; and it is in such cases that Mr. Pattison has proposed a plan of treatment founded on his views of the nature of such productions. Knowing that the vitality or power of action of any part is proportioned to its vascularity; and also, that if a part be excited to actions beyond its power to support, it must perish; Mr. Pattison proposes, in the cases we have mentioned, as a preliminary to any other operation, to tie the common carotid. The object held in view in this practice will be best explained by his own language in speaking of a case, in which this plan was ultimately adopted.

"I did *not* apprehend that, during the removal of the tumour, the patient would be subjected to a dangerous hemorrhage, and that this was to be guarded against by the ligature of the artery: another, and in my opinion, a much more important object was to be gained by it. The vascularity, and consequent vitality, of the tumours were much inferior to those of the parts with which it was connected; and as they, together with any parts of the diseased mass which it might be impossible to remove with the knife, would, by the operation, be brought into a state of inflammation and increased action. I hoped, by diminishing the circulation of the blood through them, that the morbid parts, whose powers of action were previously weak, would, by the ligature of the artery, be rendered incapable of supporting the increased action demanded of them, and that they would mortify and fall off."

In the first case, the carotid artery was tied, and a *part of the tumour* removed: the particulars are not mentioned, but the result was favourable. The second case was in the person of a negro, with fungus of the antrum on the left side: the upper part of the cheek protruded, and was much distorted; the tumour had destroyed a considerable portion of the lower and external region of the upper maxillary bone, and descended into the mouth. The finger, by pressing the fungus a little to one

side, could be passed into the antrum. The carotid artery was tied, and the tumour left to itself. "It gradually fell into mortification, and sloughed away so completely, that no vestige could be discovered on the most careful examination by the finger introduced in the antrum; no part was removed, either by knife, scissors, or caustic." The patient, however, died about six weeks after the operation, from trismus. In this instance, and in another which had come to the knowledge of Mr. Pattison, more advantage was derived from the practice than had been expected, inasmuch as the ligature of the carotid proved sufficient for the cure of the disease, without the necessity of having recourse to any operation on the tumour itself. It is proper that we should mention, that though the idea first originated with Mr. Pattison, none of the three cases occurred in his own practice, or within his own observation; at the same time, that there does not appear to be any reason to doubt their authenticity, or to question the authority on which they are advanced. The last paper in the appendix, is the account of two cases in which Dr. Mott removed portions of the lower jaw; one of which, we believe, has already made its appearance in the Journals of this country.

We must here conclude, after having, as we conceive, shewn enough to justify us in expressing a favourable opinion of Mr. Pattison's abilities, and our regret that he should not have contributed more largely to the present volume. We trust that he has not abandoned his design of continuing the subject of surgical anatomy, and that we shall, ere long, be enabled to introduce him to our readers in the character of an original writer.

ART. III. *Remarks on Irritative Fever, commonly called the Plymouth Dock-yard Disease; with* Mr. DRYDEN'S *detailed Account of the Fatal Cases, including that of the lamented Surgeon,* Dr. BELL. By JOHN BUTTER, M.D., F.R.S., F.L.S., and W.S., &c. &c. pp. 302. Devonport, 1825.

The present work contains the first authentic account of a very peculiar form of disease, which occurred chiefly among the artificers of the Plymouth dock-yard, in the Summer of 1824; and which was attended with a most unexampled degree of fatality.

We consider that great praise is due to those who, under

such circumstances, charge themselves with the duty of informing the profession of the real nature of the occurrences; and that every allowance should be made for the many unavoidable deficiencies which must exist, and for that want of method and arrangement which can only be expected from practised writers, or from those who consult only their own wishes in appearing before the public. With this feeling we shall enter upon our notice of Dr. Butter's remarks.

This gentleman, it is right to observe, is not connected with the Dock-yard establishment, and appears to have witnessed only one of the last of the cases. The accounts of all the others rest, in fact, upon the authority of Mr. Dryden, the assistant-surgeon; though no reason is assigned why that gentleman should not have executed the task which has fallen into the hands of Dr. Butter.

If to find fault were our intention, we might, perhaps, object to the plan Dr. Butter has pursued, in commencing at once with the recital of cases, without any previous general sketch of the disease, or of the circumstances under which it occurred. It appears, that besides the cases he has detailed, (fifteen in number)

"Above 250 men were laid up from their duty, by reason of various hurts received between the 24th June and the 31st December, 1824; several of whom had inflammatory attacks, not possessing sufficient interest to occupy general attention; but only fifteen patients were affected with this disease in its malignant form, of whom twelve died.

"The number of wounds was not greater than usual during that period, but the fatal results from such apparently trifling causes were unprecedented.

"Mr. Dryden has filled for ten years the situation of assistant surgeon in this yard, and has known only two instances of men dying from fever supervening on local injuries."—p. 121.

"The Dock-yard disease appeared under five different modifications:—1. Fever, with inflammation of the absorbent system; 2. Fever, with cellular inflammation and suppuration; 3. Fever, with erysipelas and vesication, or gangrene; 4. Fever, with erythematous patches; 5. Fever, with intense local pain, void of redness."—p. 128.

The most satisfactory idea of the nature of the disease will, perhaps, be given, by quoting the history of some of the cases:—

"*Case* I.—August 1, 1824. William Cowle, aged 45, generally healthy, and temperate in living, of a spare habit, and middling stature, was laid up from his duty in consequence of a punctured wound received some days since, in the sole of his left foot, from a small nail which ran through his shoe. The wound is now inflamed and painful. Cataplasms of oatmeal boiled in water, were applied, and the following cathartic pills given:—

℞ Extr. Colocynth. Comp. gr. viij.
Hydr. Submur. q. s. ut fiant pilulæ duæ.

"2d. Pain increased, and inflammation extending over the arch of the foot; the original puncture being enlarged, gave exit to some pus. A purging mixture was ordered.

"3d. In the course of the night, a piece of leather, which had been forced in by the nail, was discharged with the poultice. He now felt easier. Bowels freely opened; tongue clean; pulse about 80, and soft. Cataplasms and cathartic mixture continued.

"4th, 5th, and 6th. The reports were favourable. Continued his mixture occasionally.

"7th. Considerable fever came on, and inflammation extended up his leg, which is painful. Pulse 100, and easily compressed; much headache, nausea, and thirst. He was blooded to 16℥. Syncope produced. Cataplasms applied to the foot, and evaporating lotions to the limb. He continued the cathartic mixture.

"8th. Blood buffed; bowels open; headache relieved. Bleeding repeated to 10℥. Fainting prevented the farther loss of blood. Continued the cathartic medicines and topical applications.

"9th. He fainted frequently during the night; pulse quick and feeble; the whole limb much enlarged, and erysipelatous. Cataplasms were applied to the foot, and evaporating lotions to the limb. Calomel, antimony, and opium given with confection, in boluses. Cathartic mixture continued.

"10th and 11th. Boluses of calomel, opium, and antimony continued.

"12th. Erysipelas extending up the thigh; great prostration of strength; pulse quick and feeble. Lotions omitted; cataplasms substituted over the whole limb. Fomentations of camomile flowers and poppy-heads were ordered; bowels kept solvent by an infusion of senna, Epsom salts, and tartarized antimony.

"13th. The whole limb to the groin has gradually and progressively enlarged; its size excessive. Medicines as yesterday.

"14th. Erysipelatous tension and tenderness exist over the abdomen; breathing oppressed; pulse 130, weak and irregular. Opium, camphor, and aromatic confection ordered in boluses; and Sp. Ammon. Arom. with Sp. Lavand. Comp. in mint-water, frequently.

"15th. Singultus; extremities cold; pulse scarcely perceptible; bowels confined. Castor oil and tincture of senna given.

"2 o'clock, *p.m.* Carbonate of ammonia and wine, frequently; blisters to the abdomen; dissolution approaching. Died in the night, perfectly rational nearly to the last. Body not examined."—p. 4.

Nothing can be more evident than that in this case bleeding, in the first instance, failed in removing the erysipeloid inflammation; and when repeated, most probably, accelerated its progress. Such is the inference drawn from it by Dr. Butter,

which we conceive to be fully authorized by the report of the 8th, 9th, and subsequent days.

"*Case* II. John Bate, aged 45, sallow complexion, strumous appearance, on the 16th August, 1824, had the point of his left fore finger jammed off by a plank, and immediately amputated at the last joint. Cathartic pills given.

"17th. Perfectly easy. Cathartic mixture ordered.

"18th and 19th. Doing well.

"20th. Complains of pain in the hand, and of headache. Pulse about 96, and full. Dressings removed, and cataplasms substituted: 24℥ of blood were taken from his arm.

"21st. The stump easy, and looking inactive; pulse 110, weak; tongue white and moist. Calomel and opium given with confection, at bedtime, and cathartic mixture in the morning.

"22d and 23d. Boluses continued.

"24th. Great prostration of strength, anxiety and nausea. A blister to the epigastrium; cathartic mixture repeated.

"5. *p. m.* Symptoms much aggravated; the pulse scarcely perceptible at the wrist; breathing oppressed; abdomen tense and painful to the touch; singultus. Castor oil and tincture of senna given immediately, and repeated every two hours. Fomentations to the abdomen, and enemata ordered.

"9, *p. m.* Profuse perspiration; breathing excessively oppressed; he is evidently sinking.

"25th. Died at 9 o'clock, *a.m.* Rational almost to the last.

"*Dissection.*—Body examined nine hours after death. The thorax contained about 16 ounces of serum. The right lobe of the lungs tinged with blood, and bound with strong adhesions to the pleura costalis. The left lobe black, disorganized, easily torn, and apparently gangrenous. The pericardium rather vascular, containing about 2℥ of fluid; the heart sound. The intestines were in general excessively distended with gas, particularly the colon and cœcum; no fæces; the whole highly inflamed, particularly the lower portion of the ileum and cœcum, which in some places approached to gangrene. On removing the intestines, a tumour was perceived on the right side, which contained nearly a pint of pus, and was found to surround the right kidney, that viscus being apparently healthy; the left kidney also sound. The liver was much enlarged, very soft, turgid, easily lacerated, and with difficulty separated from the side. The gall-bladder distended with bile. The spleen and pancreas healthy. The stomach also healthy, except a red spot, about an inch in diameter, on the posterior or vertebral side, near the pyloric orifice."—p. 14.

This case, perhaps, bears a closer analogy to the instances of pleurisy, &c. immediately succeeding to gun-shot and other injuries, than to any other form of disease. As Dr. Butter remarks, the failure of blood-letting to produce relief is also exhi-

bited by it in the clearest manner. The day succeeding venesection, the pulse had risen from 96 to 110. As to the *ratio symptomatum*, we believe it is not too much to say, that it sets all explanation at defiance.

The next case that we shall quote, is that of Dr. Bell, as being in every respect one of the most interesting.

"Dr. James Bell, aged 58, late surgeon of his Majesty's Dock-yard, at Devonport, rather stout, sometimes dyspeptic, but generally healthy.

"On the afternoon of Sunday, the 19th September, 1824, attended the examination of G. Nichol's body (case 6), and scratched his right fore finger, over the extensor tendon on the last phalanx, when he was directing a pupil how to sew up the body, with a surgeon's needle, which had been previously used for that purpose. At this time the Doctor appeared in his usual state of health, and took no particular notice of the puncture or scratch so inflicted on his finger.

"On the following morning, Dr. Bell attended the surgery, at the accustomed hour of nine o'clock, and complained of feeling unwell. When washing his hands he first felt a smarting in the scratch, over his right fore finger; whereupon he became shivered, and impressed with the idea that he had caught the disease then prevailing among the mechanics of the Dock-yard, which disease had previously agitated his mind, and now made him very apprehensive for his safety. He remained, however, at the office about an hour and a half, and by that time the rigors and general indisposition had increased in such a degree as to produce considerable alarm. Pulse 96, and full. Bowels opened by an aperient taken on the preceding evening. The wound on the finger was not inflamed. He was recommended to lose blood from his arm, and to take an emetic; to both of which propositions he had a great aversion, and made insuperable objections. He went to bed, however, before noon, and endeavoured to make himself sick by irritating the fauces with his fingers, and by drinking warm water. In the course of the day his fever had increased, and a reaction or flushing followed the rigors. Dr. Dickson, physician to the Royal Naval Hospital, at Stonehouse, and Dr. Yonge, of Plymouth, were consulted. He now consented to lose about sixteen ounces of blood from the left arm by a small orifice, and to take the subjoined bolus :—

℞ Hydr. Submur. gr. v. Pulv. Antim. gr. iv. Confect. q. s.

which was to be followed by some of the cathartic mixture in the morning.

"21st. Passed a restless night, with an increase of fever. Pulse 130, and full; stomach very irritable; nausea great; tongue coated; bowels open; complains of pain and tenderness over his right pectoral muscle and shoulder, on which he cannot bear the least pressure; but the wound on the right fore finger is not at all inflamed.

Rep. V. S. ad ℥xxx.

"Ordered effervescing draughts, with saline medicines every second hour.

"8. *p. m.* No relief from the second bleeding. The blood was neither buffed nor cupped; the coagulum was rather firm. Speaks of a distressing pain about his sacrum and loins, with general lassitude and great weight, and evinces considerable anxiety. There still exists much soreness over the right pectoral muscle; and there is a great prostration of his muscular energies; but no headache. Pulse 130, and small.

Rep. Bolus, et cont. Haust. effervesc. cum potass. nitr. gr. v. 3 tus horis.—Illinatur linim. saponis in partes affectas.

"22d. Symptoms all aggravated. Passed a sleepless and distressing night, owing to the excruciating pain in his back; but felt relief towards morning from profuse perspirations. Still feels pain in his right shoulder, with inability to move his arm; complains of indistinct vision, and mistakes the distance when he attempts to take any thing. Nausea continues; Pulse 130, and irregular.

"App. Empl. lyttæ Epigastrio.

"23d. Slept a little during the night; nausea alleviated, but not gone; back-ache mitigated; pulse very irregular and frequent; articulation difficult; thoughts confused; no pain in any part but the pectoral muscle, when pressed upon; there is no redness nor visible sign of inflammation on the skin; the scratched part of the finger is neither inflamed nor swollen. He took camphorated mixture, with the nitrous spirit of æther, every two hours, and wine frequently.

"Towards evening his breathing became laborious, and delirium appeared.

"24th. Became perfectly insensible during the night; pulse wavering, occasionally indistinct and imperceptible; breathing laborious; stupor and coma present; the sphincters relaxed, and the discharges passing involuntarily; profuse perspiration towards morning, when the breathing improved. Took four doses of the sulphate of quinine, (dj.) without benefit. His deglutition was at last impeded, and a vacant stare occupied his countenance until seven o'clock on this evening, when he sunk without a struggle. Body not examined."

Dr. Butter, in his remarks, has thought it necessary, and for sufficient reasons, to point out the connexion between the scratch on the finger and all the subsequent symptoms; but as it is a circumstance of which few of our readers are likely to doubt, we shall pass over this part of the subject. The comparison of this case with that of Professor Dease, as related by Dr. Colles, in the Dublin Hospital Reports, Vol. 3, is more to our purpose.

"Professor Dease scratched his finger in dissection, on a Saturday, about one or two o'clock, *p. m.*

"Dr. Bell wounded his finger on a Sunday, about five or six o'clock, *p. m.*—The former was attacked early on a Sunday morning, with violent shivering, and sickness of stomach; and the latter before noon, on Monday, with violent shivering and sickness of stomach.

"Fever appeared in each, and both were blooded. The blood in neither instance was buffed or cupped.

"Pain in the shoulder was felt by Professor Dease, on Sunday, (2d day,) and by Dr. Bell early on Tuesday, (3d day.) The former had 100 leeches applied to his shoulder, and the latter was blooded a second time from the arm on the third day.

"On the 4th day after the accident, the Professor had an uneasiness with a colourless swelling on the posterior side of his thorax; and the Doctor suffered excruciating pain in his back and sacrum.

"On the 4th day, the scratch was first discovered by Dr. Colles on Professor Dease's thumb; but he was so unconscious of having received any cut, as almost to refuse an examination; and therefore this injury, which, no doubt, was the origin of his complaint, and the cause of his death, could not have affected his mind in the slightest degree.

"Now, so much as we allow for the one person, we must allow for the other. And if Professor Dease's state of mind had no influence whatever over his disorder, why should the whole of Dr. Bell's disorder, which resembled the other in its kind, origin, and course, be referred entirely or exclusively to his mental impressions?"

Having thus given our readers the means of forming a judgment for themselves, of the nature of the symptoms which occurred in a few of the cases, we take the liberty of passing over a mass of speculations, so unconnected, as to be in a great measure unintelligible, and in which the author seems to have taken leave of his subject. In the general view which he takes of the symptoms, Dr. Butter is apparently very much at a loss to assign a proper name to the disease. He is not satisfied with erysipelas, nor with erythema, and strongly objects to its being called inflammation. His reasoning on this subject is the most futile that can well be imagined.

"Genuine inflammation," he tells us, "excited by a local provocation, is confined usually to the spot, and condensed into the formation of an abscess; it is neither so transitory in its nature, nor so *flashy* in its march, as this disease; it is more persevering and steady—it does not leap from part to part, and produce local death—nor does it cease for a time, and recur—nor quit one part without detriment, and set upon another—reciprocally healing and killing.

"Inflammation, in general, has a defined margin—this had none. It sometimes ran, by continuity of texture, through the absorbent vessels and glands, or radiated through the cells of membranes, equally towards the trunk and extremities; whilst, at others, it leaped from finger to shoulder, without any intermediate or obvious token; from right to left, and from flank to centre.

"I would call it a capricious and a rambling disease. These fancies are not illustrative of pure inflammation. Therefore the term "inflammatory," would be very improper to couple with a fever of this anoma-

lous type, as it presupposes a theory, and prejudges a questionable line of practice."—p. 218.

It is clear, even from Dr. Butter's own shewing, that the sum total of his argument merely amounts to this; that the kind of inflammation occurring in these cases is not an ordinary one, and that it differs in many points of its character and progress from what we usually see. But granting this much, its claims to be considered as a species of inflammation are not the less evident or indisputable, as far as its nature is concerned, by whatever other name we may choose to call it.

But it will be asked, as Dr. Butter will not allow this form of disease to be called erysipelas, nor erythema, and still less inflammation, what does he himself make of it? On this point, he pursues a very strange method; not having been able to arrange the nomenclature of the local affection to his own satisfaction, without any preparation, he turns off to the constitutional effects, leaves the local disease in the lurch, and at once settles the whole affair, by telling us, that "the disease which occurred among the artificers was irritative fever."

To understand how insufficient this term is, it will be necessary to leave Dr. Butter for a time, and revert to the circumstances under which the disease originated. It is notorious that not in the Dock-yard of Plymouth only, but in many other and most opposite situations, trifling local injuries are occasionally, nay frequently, succeeded by a series of most formidable accidents, both local and constitutional. This may happen with or without cause to suspect the absorption of matter, either poisonous or otherwise. Among the men in the Dock-yard, for instance, there appears not to have been any ground for such a suspicion. We observe the contrary in the cases of Dr. Bell, Mr. Dease, and those who are engaged in dissection.

How are we to give an explanation of these occurrences? We are told, that in such cases, the symptoms resulting from the local injury are dependent on a peculiar morbid susceptibility of the individual in whom they occur. Such is the doctrine of Mr. Abernethy, and after him, of Dr. Butter, and others. At first sight, this appears very specious; but it does not bear investigation. Even admitting that the existence of such a susceptibility, or predisposition, was more generally probable than is the case, the information we gain by it amounts to nothing. To say that a certain train of symptoms follow a local injury, because of a peculiar susceptibility of constitution, is merely to tell us that they occur because there is a disposition to them, of which disposition we are only enabled to judge by the event; a

mode of reasoning evidently faulty, and which would not be admitted in any other case.

We will allow, however, that there are some instances in which this doctrine of susceptibility appears to be more tenable. We can understand that those who devote themselves to anatomical pursuits, &c. may so far injure their health as to render themselves liable to the most serious consequences from injuries of the most trifling description. But unfortunately for the doctrine, most of these are the very cases in which such an admission is least called for; as in them we generally have sufficient cause to suspect the absorption of animal matter, either absolutely poisonous or otherwise; which we know by the analogy of other diseases, is adequate to produce the most unexpected and unmanageable effects.

In no small number of cases, on the other hand, the existence of any such susceptibility appears to be an inference unauthorized by, and even in opposition to, the facts. In the cases at Plymouth, and they are not the first nor the only ones of the kind, trifling injuries produced all these formidable results in men who were previously, generally speaking, in perfect health. Are we then to suppose that, under the mask of health, was concealed a lurking tendency, ready to be excited to disease at the first moment? "Credat Judæus Apella." Why, too, should this tendency be so similar in all the cases? Why should it have been called into activity so simultaneously? Why should such occurrences be so comparatively infrequent; and why should their visitations be occasional, and, as it were, epidemic? These are questions, which we imagine, that the advocates of the doctrines of a peculiar constitutional susceptibility would find it impossible to answer; and which we certainly are far from pretending to explain. The whole subject is one of the most obscure that can be conceived, and opens a large field for future investigation. The first step is to confess our ignorance, and to guard against allowing ourselves to be diverted from our object by specious, but unproved hypotheses.

To return to the point from which we digressed; we cannot but think that the term "Irritative Fever," selected by Dr. Butter, is both objectionable and inadequate. It has not even the merit of bearing any reference to, nor indicating the existence of, the peculiar susceptibility of constitution on which he has insisted so strongly. Its adoption would lead us to attach an improper degree of importance to the secondary effects of the disease on the system, and to overlook the primary ones, on which the former are doubtless immediately dependent.

Of the treatment there is less to be said, with any degree of

certainty than might be expected; and we have been somewhat disappointed to find Dr. Butter wandering rather frequently from the statement of facts in the cases he has described, to more general speculations on the effects of various modes of treatment. Thus we find a series of common-place reflections on cold lotions, fomentations, poultices, dressings, bandages, &c. altogether misplaced in a practical work, and quite unconnected with the subject of the work. More or less of the same fault pervades every part of the book. The sum total of the information to be collected from Dr. Butter's account of the local treatment is next to nothing, and the only point on which he speaks with any degree of confidence, is as to the efficacy of incisions; in which respect, however, he is but the echo of Dr. C. Hutchinson's sentiments, contained in a letter, which at once fixes our attention, as conveying the results of *bona fide* experience.

Constitutional Treatment.—If one point is more clearly proved than another by the cases related in this work, it is, the inefficacy of blood-letting in removing the most urgent symptoms of the disease, or even checking its progress; and this too, notwithstanding "that there existed many symptoms which seemed to call for active depletion."

"Only one patient survived out of twelve, who were blooded, and there is no evidence to shew that his life was saved by venesection; and one of the most violent attacks was subdued by the efforts of the constitution, without blood-letting, excepting the quantity drawn by thirty-six leeches."—p. 249.

Again, we are told—

"Experience has shewn that out of twenty patients, recorded in this work, (thirteen of whom were artificers in the Dock-yard) who had been blooded whilst labouring under irritative fever, nineteen died."—p. 249.

If we refer to authority, we find that Dr. Duncan recommends the antiphlogistic treatment, in combination with the exhibition of stimulants, a mode of practice which experience has long convinced us is not so inconsistent as it may at first appear. Mr. Abernethy is decidedly averse to general blood-letting. Sir A. Cooper advises antiphlogistic treatment, and occasionally the application of leeches, but not general blood-letting. Dr. A. T. Thomson, himself the subject of the disease, deprecates blood-letting, and speaks favourably of stimulants and purgatives. Dr. Granville and Mr. Brodie coincide with him, having treated his case. Mr. J. Shaw speaks still more confidently of the bad effects of blood-letting; he is in an equal degree inclined to recommend direct stimulation by laudanum, porter,

and good living. His remarks, however, relate almost exclusively to the disease, as it ensues from wounds in dissection; and probably, therefore, in subjects labouring under a more or less impaired state of constitution.

Dr. Butter has also quoted Pott, Boyer, and Willan; but it is by no means probable that their observations relate to the form of disease actually under consideration.

The application of leeches is pretty generally admitted to be occasionally useful, when general blood-letting would be either unavailing or positively injurious.

Mercury.—"If we expect any good from mercury in the treatment of irritative fever; it must be either as a purgative or a gentle alterative, and not by pouring in repeated doses of calomel in 10 grs. each, into empty bowels, devoid of any contents capable of sheathing the acrimony of this powerfully deleterious mineral."—p. 263.

Among the most efficacious plans of treatment are the exhibition of antimonials, in nauseating doses, in the early stages of the disease; and purgatives, provided they be employed not so much as the means of evacuation, as for the purpose "of improving the quality of the discharges, and tranquillizing inordinate actions."

Dr. Butter also speaks favourably of bark, opium, and stimulants, under certain circumstances of the disease; but the fact of his want of personal experience in its treatment must, of course, detract from the degree of confidence to be placed in his single opinion.

He has summed up the whole of his labours in twelve conclusions, which we shall quote, merely remarking that they do not at all appear to be equally authorized by the evidence he has adduced.

"1. That the constitutions of these men had been rendered unusually susceptible of irritation at this time.

"2. That diet, air, occupation, and other circumstances, influencing animal health, had collectively operated in producing this morbid propensity.

"3. That the addition of an external injury to a susceptible habit of body, formed the disease.

"4. That any kind of local excitement sufficed.

"5. That the local injuries would have proved inadequate to the causation of this disease in persons not predisposed to excitement.

"6. That the disease was not confined to the artificers of the Dockyard, as was erroneously supposed; but was recognized in detached instances, amongst other people in the neighbourhood.

"7. That the disease was the traumatic erysipelas of some, and the irritative inflammation of other authors.

"8. That its leading character was a tendency to spread, to form sloughs, or unhealthy fluids, and to leap from part to part.

"9. That bleeding and other depletory measures proved inadequate to the cure of this disease.

"10. That two cases of recovery arose probably from the restoration of healthy secretions, and the third from the removal of tension by incision.

"11. Experience has shown that the object should be to invite and keep the disease to the surface, by local measures.

"12. That the general treatment ought to be calculated to invigorate and strengthen the constitution, with the view of expelling the aggressions of disease towards the interior."

Our general opinion of Dr. Butter's "Remarks" has been already expressed on various occasions. We cannot but feel indebted to him for undertaking to communicate the history of the Dock-yard disease; but, at the same time, it is impossible to avoid remarking the imperfections it presents, probably from the want of personal experience. Among the most prominent are—an absolute neglect of method; a propensity to superficial speculations, bearing relation to almost every subject but that which is under consideration; and a preposterous desire to introduce quotations and references, more calculated to display extent of reading than of judgment.

ART. IV. *Practical Remarks on Indigestion; particularly as connected with Bilious and Nervous Affections of the Head and other parts, &c. &c.* By JOHN HOWSHIP, Assistant Surgeon to the St. George's Infirmary, &c. &c. pp. 192. Lond. 1825.

Even if any higher praise should be denied him, Mr. Howship must at least be allowed to be a very industrious writer; in fact, if he continue his present rate of publication, we do not despair of his one day having as many works to boast of, as he at present possesses honorary titles. Within an inconceivably short time we have already had Practical Observations in Surgery and Morbid Anatomy; Practical Observations on the Diseases that affect the Secretion and Excretion of Urine; Practical Observations on the Diseases of the Lower Intestines; and—"ecce iterum Crispinus"—we here have Practical Remarks on Indigestion, &c. Now, though we have a very respectable opinion

of Mr. Howship, and though we think that he has shewn himself to be both accurate and well-informed, we do not believe that this preposterous desire of bringing himself before the public is calculated to do justice to himself or his readers. If this gentleman's writings were absolutely devoid of merit, it would be a matter of very little consequence, as regards the profession, when, or how, or what he chose to publish; that, however, is far from being the case; he is an active investigator of morbid anatomy, an attentive intelligent observer, and appears to have at his disposal the valuable stock of materials contained in the museum of Mr. Heaviside. It is not, therefore, to be wondered at, if we find that his writings contain enough to attract our attention, even in opposition to the dictates of our better judgment. If we add the constant references from one book to another, with some corresponding appearances of book-making, we shall probably have shewn sufficient cause for passing a pretty severe sentence of condemnation.

The work before us we conceive to be one of the most trivial of the whole series, and it certainly contains but a very small number of such facts and observations as prove the best defence of the others. It is, in truth, little more than a compendium of the current common-places on disorders of the stomach and bowels, with a few references to other writers, chiefly on points of morbid anatomy, and between twenty and thirty illustrative cases. We shall give some of the most favourable specimens.

Spasmodic affection of the Stomach.—After stating that the most severe and terrible instances of the kind that he has seen, have been in gouty subjects, Mr. Howship proceeds to say—

"That they have taken place while the disease was evidently flying about the constitution, and where there was reason to conclude the affection itself was the consequence of gout in the stomach; and this circumstance affords another argument, that the symptoms are the effect of spasm from muscular contraction of that cavity; particularly considering the similarity of structure along the whole line of the alimentary canal, and also that in one instance, gouty action long kept up, irritation and spasmodic stricture in the œsophagus.

"Upon this point, however, Dr. Hooper has, in conversation, acquainted me, that he does not conceive any spasmodic affections of stomach, attributable to gout, can ever be traced after death as such; for that the stomach in gouty habits is usually flatulent, and very relaxed; and that although a person, from retrocedent gout, may be seized with violent and terrible pain, referred to the stomach, with vomiting of a coffee-ground-like matter, even proving suddenly fatal, almost as if killed by a cannon-shot, yet the stomach has been found uniformly relaxed, exhibiting only patches of increased capillary vascularity on its internal surface. This he has himself seen in several such cases, and

upon mentioning the matter to the late Dr. Baillie, he observed, he believed it was so, and that he had seen much the same appearances, and those only. Dr. Hooper additionally remarked, that the violence of the pain was not positively known to be seated in the stomach, although there was much reason to believe it might be so, for the semilunar ganglion might be its seat; and that where muscular contraction without structural disease, is found, it may be considered the natural, or at least, the accidental state of the part, unconnected with any effect of disease."—p. 75.

Some attention has lately been attracted to the effects arising in children, from the attempt to swallow boiling water.

"Dr. M. Hall considers the symptoms not those of inflammation of the œsophagus and stomach, but of the glottis and larynx; and that, probably, the boiling water does not penetrate into the stomach, its progress being arrested by spasm."

Mr. Howship, however, relates two cases, which appear to prove at least that such is not uniformly the effect of the accident. One of them terminated fatally; the other favourably. In the latter, all the pain and distress were distinctly referable to the stomach, and there was pain on pressing the epigastric region. In the former, there was found inflammation of the mucous surface of the trachea and œsophagus, but without any trace of effusion. On the contrary—

"Just within the cardiac orifice of the stomach, an effusion of coagulable matter, mediate in appearance, between lymph and ropy mucous, had taken place; and that so decidedly, as to give the idea of an additional membrane lining the cavity, and visibly terminating at the cardia. This appearance was lost towards the pylorus, by the effused matter insensibly assuming the mucous character. In a few points, the villous membrane presented small spots of capillary vascularity."—p. 192.

"In another case, also related in a former work, where a young woman purposely drank boiling water, I had an opportunity of examining the stomach while recent, and found its inner surface gangrenous, and nearly black from violent inflammation."—p. 111.

Abscess of the Œsophagus.—This obscure and frequently fatal form of disease has scarcely been sufficiently noticed by pathologists; and this omission is of more importance, as its attendant symptoms may be very easily confounded with those of a variety of diseases of the trachea and œsophagus. Some correct and practical remarks on this point may be seen in Dr. Marshall Hall's Essays on Diagnosis. Mr. Howship has met with two cases, of which one had a fatal termination.

"I was requested by Dr. James to examine the body of a fine boy, aged eight years, who (July 30) had swallowed a double-pointed bit of

slate-pencil, an inch long, with a string tied round the middle. The boy, frightened, could not get it up, and several other boys, in fear of the master, pulled successively with force, and, at last, with great pain, succeeded in extracting it.

"From the time of the accident, he could only swallow liquids. A medical gentleman who first saw him, sent some castor oil, which, he said, he hoped would soon set all right; and did not repeat his visit. The child attempted to swallow the castor oil, but it was rejected with extreme pain and retching."—"The child complained of constant and great pain in the neck, although he was extremely patient.

"August 2. He had some, and the following day more difficulty in breathing; with a croupy noise, and much anxiety.

"August 5. The mother called on Dr. James, who, the next morning, visited him. At this time extreme anxiety was depicted in the countenance; a rapid small pulse; pain and evident fulness about the neck, with excessive aggravation of suffering in every motion of the head and neck. He could now swallow nothing. Leeches, and a blister were ordered, and applied.

"August 7. Early this morning he died; having all along complained of great pain, not only about the fore part, but also at the back of the neck, and between the shoulders, which parts were so tender, that he at last entreated not to be moved at all."

"On inspection after death, the whole neck felt evidently full, and thrown forward, as if by a soft tumour. I dissected cautiously through the lateral parts of the neck, down to the transverse processes of the cervical vertebræ, and opened into an abscess, seated in the cellular membrane, behind the œsophagus, filled with tenacious greenish pus, occupying the whole length of the line of vertebræ, and extending from the top of the pharynx downwards as low as the upper part of the sternum. The œsophagus did not appear to have been lacerated, or torn through in any part.

"The trachea and larynx were thickly covered internally by a secretion, in colour and consistence, very like pus; with some mucous tenacity; but without any degree whatever of discoloration, or redness of the inner membrane. The rima glottidis was, from tumefaction, nearly closed."

"Mentioning the above circumstances to Sir Astley Cooper, at Mr. Heaviside's, he said he had lately seen a lady, who, swallowing a part of the breast-bone of a pigeon, had grazed her throat, which was for a week very sore, and then got worse; with difficulty of breathing and greater difficulty in swallowing; within another week proved fatal. A large abscess was in this case formed between the pharynx and upper cervical vertebræ. He was just after this requested to look at a tutor, who had difficulty in breathing and swallowing: alive to the thing, he looked into the pharynx attentively, and touching it, felt a fluctuation, punctured it, let out matter, enlarged the opening, and the man got perfectly well."—p. 150-2.

We shall here conclude our extracts by expressing a hope,

that when Mr. Howship next comes before us, it may be in a form of more value to his readers, and more worthy of his opportunities and acknowledged talents.

ART. V.—*Military-Medical Reports; containing Pathological and Practical Observations, Illustrating the Diseases of Warm Climates.* By JAMES M'CABE, M.D. pp. 253. Cheltenham, 1825.

The extent and importance of our Colonial possessions in the East and West Indies, gives a degree of importance to every thing relating to the diseases of warm climates, in which it is scarcely possible that the inhabitants of other countries of Europe should participate to any great extent. But even notwithstanding this circumstance, the constant call of attention to such subjects, and the manner in which they are ordinarily brought forward, have long since, in a great measure, destroyed the interest thereby excited, and in its place have substituted a feeling of irksomeness approaching to disgust. On this account we are always inclined to place a considerable restriction on our notices of medical works coming within this description, even at the risk of giving offence to some by our omission.

Dr. M'Cabe's reports, though sensibly put together, and creditable to him both as a writer and a practitioner, present no very urgent reason for deviating from our ordinary custom. He informs us, that in the year 1812, he joined the army on the West India station as a medical officer, and during a residence of five years in that climate, omitted no opportunity of ascertaining by dissection, in the military hospitals, the effects produced on the human body by tropical heats and tropical diseases.

Among the most novel and valuable parts of the work, are the reports it contains on the Medical Topography of the Island of Trinidad, which appears to have been the principal seat of the author's observations. We conceive that our readers will feel indebted to us for extracting one or two of these in preference to the "thrice told tale" of the symptoms and pathology of yellow fever, dysentery, &c.

"This island," (Trinidad) "so beautiful in its exterior, and so luxuriant in the production of every thing besides, in the animal and vegetable kingdoms, is unfriendly to the constitution of man. The whole face of the country is covered with trees and brushwood; it abounds with rivers and rivulets, and the greater part of its extent is a

continued marsh or swamp. The action of the sun's heat on such a soil, occasions a continual evaporation from the surface of the earth. This evaporation becoming combined with marsh miasmata, and the effluvia arising from the putrefaction of animal and vegetable matter, the atmosphere is generally loaded with the seeds of disease. The evaporation occasioned during the day by the intense heat of the sun's rays, becomes condensed on the higher grounds and hills during the night, and occasions a great degree of cold, and a greater disproportion between the temperature of the day and night, than is ever experienced in any of the other islands. The thermometer in the shade at noon stands, generally, at about eighty-three, at the military post of St. Joseph's, about seven miles east of Port of Spain, in the interior of the island; and at the same place, at five o'clock in the morning, it frequently ranges as low as sixty. At this hour of the morning, which I believe is the time that the greatest degree of cold is produced, if a view of the island be taken from an eminence, the condensed and floating vapours appear like a continued sheet of water, losing itself gradually in the surrounding sea; the surface appearing as if undulated by a gentle breeze; or perhaps, rather presenting an appearance like the heaving of the ocean, after the greater agitation of a storm has subsided.

"The human body, subjected during the day to an atmosphere sultry and impregnated with unhealthy effluvia, and this, too, frequently while under the influence of excesses and intemperance, is chilled by the difference of temperature above alluded to. The blood is driven from the surface, and leaves the skin and extreme vessels pale and flaccid, while the force of it is directed to the internal and vital organs, occasioning all the consequences of diseased action in those parts. The increased action of the lungs frequently occasions pneumonic inflammation, sometimes terminating in an effusion to lymph into the air cells, and occasioning suffocation, but more generally producing dropsy of the chest. The liver becomes solid and tuberculated, the biliary ducts thickened and obstructed, the contents of the gall bladder become extravasated, and give to a section of the liver the colour and consistence of new cheese. In a word, the action of all the internal organs is increased, and occasions a serous effusion into all the cavities that are bedewed by the arterial exhalants.

"As might be expected from the surface of the country, a great quantity of rains fall in this island. These copious falls of rain occasion that luxuriance of growth in all kinds of vegetable matter which has been already noticed, and affords an inexhaustible source for vegetable putrefaction. It has been remarked by the inhabitants of this colony, that a dry season is more unhealthy than a wet one; and from having observed and attended to the effects of both kinds of weather on the troops, I have no hesitation in coinciding in that opinion, so far as regards remittent fevers, which are certainly more concentrated and more dangerous during a hot and dry season, than they are during a wet one. I believe that this is caused by the rain preventing the sun from acting on the marshes, and evolving their pernicious effluvia.

Hot weather immediately succeeding to rain, is the most unhealthy, as the sun then acts with double effect on the accumulated sources of effluvia collected during the rain. I have no doubt, however, but that dry weather, should it continue sufficiently long to dry the earth and purify the atmosphere, would render this island more healthy: such a change of climate can only be produced by human industry, by clearing the country and draining the marshes; but from the disproportion of the number of the inhabitants to the extent of the island, this desirable object is never likely to be accomplished, and consequently it will continue a source of disease to every European, whom duty, or choice, or imperious necessity, obliges to become an inhabitant of its luxuriant soil."—p. 44.

Again,—" That disease which has been so frequently spoken of as being peculiar to this island, and from which the West India Rangers suffered so much at this port, is now well marked in many of our men. Their countenances bloated, cadaverous and dejected—legs and feet œdematous—respiration hurried and difficult—they become exhausted by the least fatigue—some of them are observed, during the gentle exertion of walking, to stop suddenly, and laying their hands on their knees, endeavour by bending their body to assist their laborious breathing. This disease has, I understand, been considered a disease of the stomach, and called—" *mal d'estomac.*"—In its form among our men, although it is always attended with sickness and nausea, the affection of the stomach appears to be merely a consequence of a generally diseased state of the system. When the symptoms I have mentioned have been present for some time, the unfortunate sufferer either becomes anasarcous, or a wasting diarrhœa attacks him; or perhaps when received into hospital, he only complains of difficulty of breathing, which in these cases is occasioned by water in the chest; or perhaps a complication of all these symptoms will be present in the same individual. If relief is afforded him, and he is discharged from hospital, it is only a temporary respite; he is again admitted with more aggravated symptoms, and his constitution at length sinks under this complication of diseases.

" To trace a European soldier, from the time he arrives in Trinidad in perfect health, till his constitution is exhausted by a succession of diseases, is melancholy, but interesting. A post like St. Joseph's, in the middle of a country, and without any barrier, or boundary to restrain the excursions of the soldier, or to prevent the introduction of rum, affords every facility for indulging in this destructive liquor; especially as the barracks are surrounded with sugar plantations, where new rum can be got for a mere trifle. The new soldier or recruit greedily indulges in this, and is frequently, while under the influence of excesses, exposed to the chills and damps of the post: after each monthly payment, he goes into hospital with a bowel complaint, or perhaps an attack of fever. A succession of these scenes recurs with the monthly periods of payment; at length the habit, which was robust and plethoric on his first arrival, becomes cachectic and œdematous; water is now con-

tained in the chest, and perhaps in the abdomen; the lungs are frequently diseased, the stomach rejects food, and the whole constitution has now suffered that change, which characterizes the disease of the island.

"In producing this change in the constitutions of the men, there are many other causes that might be mentioned. The bad state of the barracks, and the marshy nature of the country, have been represented in a former report. A great cause, among soldiers of a certain description, is the insuperable barrier, which they know is opposed to their return to their own country. Where hope is cut off, desperation succeeds to it, and viewing their situation through the gloomy medium of despair, they become careless of existence, and consequently indulge in any excesses that produce a momentary gratification."—p. 65.

In another report, transmitted in June, 1817, Dr. M'Cabe asserts, "that there is no term for any one disease sufficiently comprehensive, to be applied to the state of constitution, succeeding to repeated attacks of disease at this post."

"It comprises all the various forms of disease, that would appear to have been contemplated by Cullen in his class "Cachexiæ." An attack of intermittent is frequently combined with dysentery, and anasarca or ascites, or both; and examination after death will probably shew, that hydrothorax might have been added to this list of diseases. The cellular membrane over the whole surface of the body is distended with fluid, and the cells filled with fat of a peculiar white colour, which gives to the skin that sallow and bloated appearance remarkable in this disease. Dissection has shewn, that in this state of the constitution the heart has lost its muscularity; the ventricles, on pressure, present no muscular resistance, but suffer their sides to close together like a pouch or membranous sac."

"In the treatment of these men various remedies have been tried, but after repeated attacks, the broken constitution at length sinks. Squills, combined with Calomel and Opium, have frequently reduced the dropsical swellings, but they generally return. This mode of treatment, however, appears to do more good than any other that has been tried. After the swellings have been removed, bitters are used with benefit. Calumba, Gentian, Extract of Bark, Tinct. Mur. Ferri. &c. agreed best with the patients. Digitalis was tried, but I think without benefit. As it is calculated to lower the action of an organ, which by dissection appears in these cases to have been already too low, it might be worse than useless, and has been consequently laid aside. The use of nitric acid mixed with water, has been suggested and tried. It disagreed with all who took it, generally occasioning griping, and an increase of the dysenteric symptoms; it was of course discontinued. The kernel of a nut, which grows in this island, and is known by the name of the "sequa nut," is much extolled by the Spanish part of the inhabitants, as an effectual cure for intermittent fevers, and their consequences. Its taste is nauseous and bitter. Its direct effects are nausea and general sickness. This nut we have also tried, in the manner recommended, that is in the form of a spirituous

tincture, but we could not observe it to produce any of those beneficial effects for which it has been celebrated by the Spaniards."—p. 17.

In reading Dr. M'Cabe's well drawn up description of this formidable cachectic disease, it is impossible to avoid being struck by the analogy which some of its principal symptoms present to those of the "Beriberi," which is endemic in certain parts of India, but more particularly in the Island of Ceylon. That such should be the case is, however, by no means surprising, when we consider the remarkable similarity of the principal features of the medical topography of the two countries, though so widely separated, and placed in opposite hemispheres. *(Vide Marshall's Medical Topography of Ceylon.)*

While the causes of such a formidable disease are still in operation, but little can be expected from any mode of treatment; to those however, who might have the opportunity of following up the hint, we would suggest the propriety of trying an artificial compound, corresponding to the aluminous water of the Isle of Wight, which proved so serviceable in this disease, in the hands of Dr. Lempriere.

We have already given our reasons for not touching on the other Sections of Dr. M'Cabe's book, which treat of Fever, Dysentery, Hepatitis, &c., and are only anxious to state that in so doing, we are by no means insensible of their value, enhanced as it is by the simplicity and modesty of the author's style. We have been solely influenced by the wish to combine novelty with utility, and have only to express a hope, that we have not altogether failed in the course we have adopted.

ART. VI.—*Traité Chirurgie et Physiolgique de l'Encephalite, ou Inflammation du Cerveau et de ses suites*, &c. Par. M. I. BOUILLAUD, M.D. &c. 8vo. pp. 374, Paris, 1825.

Pathological works of all kinds are, at this time, rushing like a deluge from the French press. Every young physician in France, like many in this country, thinks it necessary to write a book, in order to recommend himself to the world; and among that number we may, perhaps, rank our present author, M. Bouillaud.

He must be an enthusiastic writer, for he seems to contemplate at no distant date a kind of medical Elysium, where the physician will no sooner see a disease, than he will be able to remove it; and all this, he gives us to understand, will be brought about by the extreme accuracy of French *Autopsia*,

or Anatomical examination of dead bodies. Medicine, he says, in the present day, *threatens* to surpass all other sciences, and it will be to M. Broussais that she is indebted, when she shall obtain this glorious pre-eminence.

The Anatomy, Physiology, and Pathology of the brain and its dependencies, in M. Bouillaud's opinion, have hitherto remained in a state of great obscurity; and it is to assist in removing this darkness that he has come forward with the present work, and that he may not be behind others, who, with a kind of fury, are proceeding to tear in pieces that veil, which Nature has thrown around the system of the brain and nerves.

The author has adopted the opinion of M. Broussais, and regards tubercles and all other productions, which make their appearance in the brain as the consequence of inflammation, and he thinks that in this process the liquids are equally affected with the solids. M. Bouillaud will not allow that redness, tumefaction and pus are the sole characteristics of inflammation, and that it never leaves behind it any other traces of its existence. The consequences of inflammation, indeed, vary according to its seat.

"Thus, for example," says M. Bouillaud, "the cellular texture, and the parenchymatous organs secrete pus, properly so called; thus serous membranes secrete a matter partly coagulable, and ready to be changed into cellular or serous *laminæ;* thus the periosteum furnishing a matter of a different kind, which runs, together, hardens, and becomes ossified; and thus the arterial texture, essentially consisting of a fibrous membrane, exhales a purulent fluid easily convertible into earthy, ætheromatous, fibrous, fibro-cartilaginous or calcareous plates."

"The various accidental productions show that there has existed, at a former time, an inflammation in the texture where they are found; but they do not always announce, indeed, they do not constitute an actual inflammation. *The daughters* of inflammation, if I may so express myself, may remain, after it has itself disappeared, and may, in some sort, survive their *mother;* playing then the part of foreign bodies, they occasion the same accidents, and the same effects that those could have produced; and after having owed their birth to an inflammation, they not unfrequently, in their turn, become the source of a new inflammation."—pp. 4-5.

The whole work of M. Bouillaud is divided into two books: The first embraces Encephalitis in all its stages, and consists entirely of cases; the second gives the general history of Encephalitis, and is divided into five chapters, treating successively of the symptoms, the causes, the treatment, the duration, the prognosis, and the complication of the disease. We shall begin with the second book, and shall notice the cases occasionally as we proceed; premising that these cases afford an incontestible

proof of the little that can be done by medicine, to alleviate or cure this very formidable disease.

When Encephalitis is considered in connexion with its anatomical appearances, it may be divided into four principal periods. In the *first*, the brain is injected, red, swollen, and a little hardened; it is in a state of *pathological* erection, and is never accompanied by any kind of softening (ramollissement.) Upon cutting into the inflamed part, the blood oozes out at a vast number of points; there are also sometimes little extravasations of blood; and there are various gradations of the inflammatory colour.

In the *second* period, "the organization of the cerebral pulp is evidently altered; it has lost, in a remarkable manner, its consistence; we would say, that the force of cohesion, which held together its particles, has been more or less completely destroyed; and that the substance is beginning, as it were, to pass from a solid to a liquid state: whence the name of *ramollissement* or softening, which some modern authors have given to inflammation of the brain. Yet we must not confound this softening with the loss of cohesion observed in an inflamed texture; they are two distinct things."—p. 231.

Ramollissement, is a phenomenon, not yet properly explained. M. Bouillaud is inclined to think that it is merely the cerebral pulp, more or less infiltrated with pus; whence its varieties of red and white, which have been described by authors.

In the *third* period, the pus, which was at first simply infiltrated into the cerebral pulp, gradually breaks down the cells in which it was confined, and is collected into a focus or single cavity, thus forming those purulent collections which authors have distinguished by the name of *abscess*. The cerebral abscess is like other abscesses; but their pus varies in colour, consistence, odour, and perhaps in its chemical composition. The cyst which surrounds the abscess is sometimes of a fibrous, or fibro-cartilaginous texture; and sometimes, though rarely, it shows a calcareous incrustation. Its inside seems to be intermediate to that of a serous and mucous membrane.

"It would be of importance to know, says M. Bouillaud, if the fluid contained in an encysted abscess of the brain, can be completely absorbed, and if the opposite sides of the cyst, after having come in contact, at length unite, as has happened in several cases of effusion into the pleura. From analogy, we may believe that such a thing is not impossible."—p. 238.

In the *fourth* period we meet with a great number of accidental productions, so different in their form, appearance, and structure, that they have been divided into different kinds; such as *tuberculous*, *cancerous*, *calcareous* and *erectile*. M.

Bouillaud sees various points of resemblance betwixt tubercles and abscesses.

"Give," he says, "to the matter of an abscess an albuminous consistence or a caseous cohesion, and you will make a tubercle of it; on the contrary, soften or liquefy the matter of a tubercle, and you will obtain an abscess. The tubercle is nothing but the matter of suppuration in a solid form, and the abscess is the same matter in a liquid state." pp. 241.

With regard to cancer of the brain, as tuberculous matter has been found mixed with it, M. Bouillaud does not think it necessary to assign to it any other than an inflammatory origin; and, besides he has found vessels in the deepest part of the cancerous mass and a cellular texture of new formation, affording manifest traces of an inflammation of ancient date.

The following dissection of a case given by M. Andral, will give us a good idea of cancer of the brain. It was that of a man fifty-eight years of age.

"The sub-arachnoid cellular texture was infiltrated with a moderate quantity of serum. Viewed externally, the circumvolutions of the right hemisphere appeared flattened. Cut in thin slices to a level with the corpus callosum, nothing remarkable was seen in the brain, except that a good deal of serum escaped from the two lateral ventricles. In front of the thalamus nervorum opticorum of the right side, there was a small *ramollissement* of the size of a half crown piece: there, the cerebral substance of a straw colour, was reduced to a deliquescent pulp; but on the outside of the right thalamus, and of the corresponding corpus striatum, there was a different kind of ulceration. In the extent of four inches in length, and two or three in breadth, there appeared a substance of a reddish grey colour, knobby, wrinkled, and uneven, resembling in some degree the fungus of the dura mater. Upon cutting into this part, the scalpel met with a resistance like that which is opposed to it by the schirrous masses of the stomach and liver. There, the texture was, as it were, areolated, of a bluish white colour, semi-transparent, very hard, and hollowed here and there with small cavities, full of a liquid analogous in appearance to apple-jelly, (schirrus in a state of crudity and ramollissement). In other points was seen a texture of a dirty white, pretty firm, and pervaded by reddish lines, crossing each other in different directions, (encephaloid in the state of crudity). In other points there was nothing found, but a kind of reddish pap. (Encephaloid in the state of softening.) This alteration extended from the level of the optic thalamus almost to the base of the brain. Round it, the cerebral substance, in a healthy state, was united to it by continuity of texture." pp.—213, 214.

Osseous productions are sometimes found in the cysts, which contain pus or tuberculous matter, and the membranes of the brain are sometimes ossified; but M. Bouillaud has never seen

a real ossification of the cerebral substance itself. He has, however, found the pineal and pituitary glands putrified.

Melanic and erectile productions have never occurred to him in the cerebral substance; but M. Cruveilhier has given a case of erectile tumour of the brain.

The above-mentioned productions may appear alone, or in combination with each other. The general opinion now seems to be that they have all an inflammatory origin; no proof at least, has been brought forward to shew that they have not. Upon this subject our author has some hypothetical reasoning, with which we think it unnecessary to fatigue the reader.

The second chapter embraces the physiological characteristics of encephalitis, or its symptoms. It is divided into five members. The *first* contains the symptoms of general inflammation of the brain. These, in the period of irritation, have many things in common with what we have long known under the name of phrenitis.

"At the sight of this picture," says M. Bouillaud, "most readers will recognize an inflammation of the arachnoid, and will accuse me of confounding arachnitis with encephalitis. To this I reply, that the symptoms of arachnitis, as described by authors, are precisely those of a superficial or slight inflammation of the whole brain: it is not I then, who confound encephalitis with arachnitis, but those authors who have confounded the latter with the former. It is evident, indeed, that the inflammation of the arachnoid, if it were not accompanied by that of the brain, would produce neither delirium, nor convulsions, nor increased sensibility of the senses, since these symptoms are nothing else but an alteration of functions, the seat of which is in the brain and not in the arachnoid. But if the symptoms of which we have been speaking, make their appearance in inflammation of the arachnoid, it is because the irritation affecting the arachnoid is propagated over the whole brain, round which that vast membrane is so luxuriantly spread. I repeat, that general encephalitis is constantly the sequel of inflammation of the arachnoid; I do not know at least that there has ever been a case published of general inflammation of the brain, *primitive* I mean, not preceded by that of its membranes."—p. 250.

The second period of general encephalitis is that of compression. It seems to be the coma of authors.

"The symptoms of irritation and compression, of spasm and collapse, sometimes alternate very rapidly with each other. The pulse, the breathing, the secretions present also, at each alternation, the most striking inequalities and the most marked contrasts, whence the name of *ataxic fever*, which has been often given to the inflammation of which we are now speaking."—p. 252.

"The *second* number is employed upon the symptoms of partial encephalitis. In *its* period of irritation, the author passes in review the

morbid affection of the muscles, of the senses, and of the intellect. In examining," he says, "attentively all our cases, we find stiffness in the limbs, with a state of semiflexion, and an impossibility, more or less complete, of executing the voluntary motions; in a word, spasmodic motions, and even real convulsive paroxysms. In the cases of pure and simple encephalitis, the stiffness of the limbs with palsy and semiflexion, has appeared to us to be the most constant, and indeed the real pathognomonic symptom. With regard to the convulsive paroxysms, we have seen them almost constantly the concomitants of encephalitis, complicated with arachnitis."—p. 253.

In confirmation of these opinions, M. Bouillaud refers to the cases in the preceding part of the volume, which all, except in one solitary instance, prove that rigidity of limb is an almost constant symptom of the disease.

In partial encephalitis, the senses are not always injured.

"Most of our patients," says the author, "retained the natural use of the greater number of their senses; or at least, they were little altered. In those cases where we observed an uncommon susceptibility of sense, the partial inflammation of the brain was complicated with arachnitis; and, therefore, with general encephalic irritation. But where there was partial encephalitis, exempt from complication, the sight, the hearing, the smell, the taste, shewed no sensible exaltation; the same thing may be said of the sense of touch; only, when efforts were made to extend their half-bent limbs, the patients complained more or less of severe pain."—p. 257.

M. Bouillaud has also observed headache, but he cannot say that it depended *essentially* upon simple encephalitis.

If delirium is almost a constant concomitant of general encephalitis, it is hardly ever met with in that which is partial; for in the latter, one hemisphere of the brain is sound, and by means of it the intellect is preserved.

In the period of suppuration and disorganization of the inflamed substance, the spasmodic symptoms are succeeded by palsy.

"Betwixt the *convulsive* paralysis, which accompanies the irritative period of encephalitis," says M. Bouillaud, "and the *resolutive* paralysis of the second period, there is this essential difference, that the first, the produce of that kind of local compression which acts upon the point where inflammation accumulates blood, may be speedily dissipated; if the inflammatory action stops short, and *miscarries*, if we may so speak; whilst the second, the result of disorganization of the cerebral substance, is no longer able to disappear, but is prevalent and final; unless, by an operation, (of which, alas! we have no example,) Nature repairs the loss of substance which the brain has suffere; and in so far restores the function, by creating for it a new organ." *d* p. 260

This shews the necessity of extinguishing the inflammation before it has time to disorganize the part which it occupies.

The sensitive functions are, for the most part, equally injured with the muscular. The intellectual functions are seldom touched.

"It is evident, indeed," says our author, "that the brain, the organ of the intellectual faculties, being composed of two symmetrical and perfectly similar halves, any one of them will be equivalent for the mechanism of intelligence, which is simple, to the two united. The difficulty does not even consist in conceiving why the intellectual functions are fully exercised by means of only half a brain; but rather in determining why we do not think double, if I may so express myself, seeing that we have a double understanding, one on the right, and another on the left side. I shall make no attempt to resolve this difficulty; I shall merely say, that with two equal, and, as it were, symmetrical thoughts, we do not think double, for the same reason that we do not see double, that we do not hear double, &c.; although the organs of these senses are themselves double."—pp. 263-4.

As many of our readers may not know that they have two understandings, it would have been a pity to deprive them of the above exquisite morsel.

"Without this admirable contrivance," he goes on to say, "an injury done to a single hemisphere of the brain would have deprived us of the most noble of our privileges, of that intellectual power which sparkles in man with all its lustre, and to which he is indebted for the sovereignty which he exercises over all other animals."

In this period, M. Bouillaud thinks that the physiognomy of the patient will greatly assist us in our diagnosis. Thus, when the exercise of the intellectual functions is entirely suspended, the countenance bears the marks of idiotism and imbecility. This is evident to the most superficial observer; but a skilful physician can go much farther, and by the countenance alone, can almost point out the very part affected in partial encephalitis. Such, at least, is the opinion of M. Bouillaud.

In the period of accidental productions, there is, of course, disorganization in that part of the brain where they have their seat, and the effect is a corresponding palsy, which may be entitled the *generic* phenomenon of such productions. Other phenomena, if present, depend on some complication or other; and most frequently upon an inflammation of recent date, ingrafted upon one which had existed at some former time.

In the *third* number of his second chapter, our author enters upon a more difficult task, that of ascertaining, by the symptoms, the very portion of brain which is affected; and these symptoms

he arranges in the same order as hitherto, that is, according as they are connected with the muscles, the senses, or the intellect.

On the first of these, M. Bouillaud presents us with the following result of his own researches and reflections :—

"1. The palsy," he says, "of the organs of speech depends upon an injury of the anterior lobules of the brain. I have collected," he continues, "so great a number of facts in support of this opinion, that I now regard it as one of the most incontestible truths. I trust that the reader will agree with me on this point, if he has read attentively the cases and reflections which I have brought forward in the former part of my work.

"2. The palsy of the inferior extremities is connected with injury of the middle lobules, or of the corpora striata. This opinion is nearly the same with that of Saucerotte and of MM. Foville, Pinel-Grandchamps and Serres, MM. Foville and Pinel-Grandchamps and M. Lacrampe-Loustan have published several cases confirmatory of it; and I have reported some in this work. I own, however, that this second proposition is not so fully proved as the first.

"3. The palsy of the upper extremities, or limbs, is produced when there is disease of the optic thalami, or of the posterior lobules of the brain. In this proposition I merely repeat the opinion of the above-named gentlemen. Perhaps it should be in some respects modified. In fact, I have sometimes met with an insulated palsy of the arm, corresponding to an affection which did not occupy, exactly, the posterior lobule of the brain, but rather the point of junction betwixt that lobule and the middle one, or even a part of the latter. Cases 10, 13, 19, 21, 27, 31, 32, are examples of palsy of the upper extremities, corresponding with diseases of the parts here mentioned. Case 24, in which the ligature of some twigs of the brachial plexus occasioned a suppuration of the posterior lobule of the opposite cerebral hemisphere, is extremely valuable, as it would seem, from this fact, that the ultimate origin of the nerves of the upper extremities is in the posterior part of the brain.

"4. The palsy of the muscles of the eye does not always accompany that of the muscles of the other parts. It must, therefore, depend upon the disease or injury of a distinct portion of the brain; but with regard to this point I have, as yet, heard nothing confirmed."—pp. 276-8.

M. Bouillaud thinks that, although he may be sometimes mistaken in determining the connexion which subsists betwixt the seat of palsies and cerebral disease, it will remain always proved, that there are in the brain several centres of motion, as there are several intellectual organs.

"I know," he observes, "that the preceding propositions appear to contradict the results of experiments which have been made on animals. It is certain, indeed, that an animal, after its cerebral lobes have been removed, is still able to walk, run, and perform many other motions; and it is equally certain that, in man, an alteration in one of the cere-

bral hemispheres, gives rise to a palsy of the voluntary muscles of the opposite part of the body, more or less extensive. Can these facts be refuted? No, certainly. A time will come, however, when the present contradiction which exists between them, will vanish. Meanwhile, let us remember that the muscular system obeys different nervous powers. Thus, for example, the nervous power which regulates the motions of the internal muscles, as the heart; that which presides over the motions of respiration, and all those which are named *conservative* or *instinctive;* and that which governs the voluntary, meditated, and intellectual motions, are essentially different, and their respective seats have been fixed with precision by modern physiologists. The brain, as the organ of intelligence and the centre of will, is the nervous power which rules over those motions which an animal exercises in consequence of an intellectual act; an injury done to this organ will, therefore, paralyse *only* the motions of its own order."—pp. 279-80.

Those animals which are deprived of their cerebral lobes, do indeed move about, but none of their motions are regulated by intellect.

In our author's observations on the injuries done in the nervous centres, which regulate the external senses, we find nothing worthy of remark; except that he makes the nervous centre, presiding over the sense of touch, extremely multifarious, and capable of being divided into almost innumerable portions.

With regard to the cerebral disease or injury, which corresponds with observations of the intellect, our author confesses that he has little or nothing to advance. Yet he affirms, from pathological facts, that the anterior lobules of the brain are the organs of the formation and of the memory of words. But though a Gallist and a Frenchman, he has not ventured to go a step farther; nor does it appear probable that pathology will ever, except in this solitary instance, lend assistance to the fanciful speculations of Gall and Spurzheim. It must be acknowledged, however, that some of M. Bouillaud's remarks on this subject are ingenious and worthy of being read.

In the *fourth* number of the second chapter we have a view of the modifications of the symptoms of encephalitis, according as it is seated in the medullary or cineritious substance of the brain. To M. Bouillaud it appears incontestible, that sensibility and muscular motion (myotilité) have each a distinct organ in the brain. These, it is probable, he thinks, are the cineritious substance for sensibility, and the white or medullary substance for muscular motion. But this opinion, he acknowledges, is a mere hypothesis.

Mental derangement, according to our author, has its seat in the cortical substance, and he attempts to support this idea by a reference to cases.

"If you take into consideration," he says, "these facts, which I could multiply almost to infinity; if you observe, also, that those physicians who have been most recently occupied with the investigation of mental alienations, have remarked that they were accompanied by disorganization of the cortical substance of the superior circumvolutions of the brain; in fine, if you reflect, as MM. Parent and Martinet have done, that deliverance belongs to inflammation of that portion of the arachnoid which covers the convexity of the brain, you will be much disposed to subscribe to the opinion of MM. Foville and Pinel-Grandchamps, who seat the intellect in the cortical substance of the upper part of the brain."—pp. 296-7

M. Bouillaud, after giving a short abstract of his previous reasonings, now comes to the fifth number of his second chapter, which treats of the sympathetic symptoms of encephalitis.

When the disease is confined to the cerebral hemispheres, respiration is nearly in its natural state; and it does not become laborious till the medulla oblongata is affected towards the termination of fatal encephalitis. Neither does it affect the circulation in a sensible manner; for in all our author's cases, little or no mention is made of febrile excitement; the heart, as well as respiration, being independent of cerebral influence. It is not the brain, but the nervous system of the ganglia, which is really the conductor of febrile irritations.

"A disorder in the circulation is never the necessary and essential effect of pure and simple encephalitis; and when that disease is accompanied by fever, we may be assured that there exists some complication. But of all the complications of encephalitis, the one which oftenest excites fever, is undoubtedly arachnitis. Inflammations of the digestive and respiratory organs play also a very important part in the production of the fever which is sometimes complicated with encephalitis. I will add, that none of these inflammations occasion fever, unless they are combined with a primitive or secondary irritation of the sanguineous vascular system."—p. 304.

On the purely digestive phenomena, the brain, according to M. Bouillaud, has no direct influence; but in encephalitis, the desire of food, and the evacuation of the bowels, as being in some respects voluntary, must necessarily be affected; and the same thing may be said of the excretion of urine.

In his *third* chapter, our author enters upon the causes of encephalitis, and their modes of action; and after a very careful reference to his cases, in a former part of the volume, he enumerates the exciting causes in the following order:—

"1. The immediate and direct action of the vulnerating agents upon the skull; 2. The transmission of an irritation primitively fixed upon one or more nerves, which terminate in the encephalon: hence the en-

cephalitis which follows inflammation of the face, ear, eye, and wounds of nerves, &c.; 3. Grief and mental toil; 4. The abuse of stimulant ingesta, spirituous liquors for instance, the use of certain irritating medicines, as nux vomica, &c.; 5. The presence of a foreign body in the encephalon, whether it be occasioned by a ball or other substance from without, or have been formed pathologically, as in the production of tubercles, &c.—However different are these causes, they all have the common property of irritating the texture of the brain."—p. 310.

The sanguineous or nervous constitution, the too great energy of the left ventricle of the heart, and a latent and chronic inflammation, so frequently met with in persons who die of cerebral affections, may be mentioned as predisposing causes. Many others, which are commonly known, M. Bouillaud thinks it would be but a waste of time to enumerate. Children and old persons are those in whom the disease proves most fatal. In children, however, encephalitis is generally accompanied by an acute inflammation of the arachnoid; indeed the cerebral fevers, and the acute *hydrocephali* of infants, as described by authors, are nothing else, and every one knows how fatal they are to children. We may observe, however, with M. Bouillaud, that exciting and predisposing causes differ but in degree.

In the author's *fourth* chapter, we have the treatment of encephalitis; and in beginning it, he very sagely observes, that in order to treat a disease rationally we should know its nature. Encephalitis, therefore, being of an inflammatory nature, we must combat it with antiphlogistic remedies. These, surely, at this time of day, we need not point out; we may remark, however, that they never can be useful but in the very outset of the disease. A moment's delay will bring death. A small blood-letting often augments the evil, while a large one suddenly diminishes the violence of the symptoms. After blood-letting, our author's most favourite remedy is the application of cold to the head. There are several modes, he informs us, of applying it to the head, the most simple and best of which is the following:—We take a bladder, and make it half-full of ice, and then place it upon the head. As soon as this is well melted, it is replaced by a fresh quantity, and so on successively till the desired effect is produced; at the same instant the patient's feet may be placed in hot water.

Of less, but of some utility are revulsive remedies, employed externally and internally, which, indeed, ought never to be neglected. These are sinapisms, blisters, setons, moxa, cupping, caustics, laxatives, and purgatives; but they should not be administered till the inflammation is upon the point of passing into

the chronic state. M. Bouillaud informs us that when cupping is put in practice over leech bites, it is often productive of the happiest effects. Of all internal revulsives tartar emetic, largely diluted with water, and given freely to the patient, has acquired most celebrity, but when given as an emetic it may be attended with bad consequences.

Our author now gives several instances of cures: and of these we may observe, that the treatment is much more active than we had any reason to expect in France. In one case, four pounds of blood were drawn off, and thirty leeches were applied to the neck, all in the course of a few hours. The patient was a stout man, forty-two years of age. In the other cases, blood-letting, general and local, was adopted to a great extent, in conjunction with the application of ice to the head.

These cases are followed by a few more of encephalitis from wounds, where, by active treatment, a speedy and complete cure was obtained, but as these are all extracts from the Memoirs of the Royal Academy of Surgery, and are of ancient date, we need not trouble our readers with them.

On the treatment of abscess of the brain M. Bouillaud has not much to say: the subject is still in its infancy. The matter should be evacuated, if possible. "Here," says the author, "if the marks I have pointed out, as denoting the seat of the disease, can be relied on, we have very valuable guides to direct us when to apply the trepan, in cases where that operation shall be judged requisite." Two cases are here given from Quesnay, where pus was evacuated from an abscess of the brain, and where both patients recovered.

When schirrous, encephaloid, fibrous, steatomatous, and other tumours are formed in the brain, they demand the same treatment as those treated on the surface of the body; but all such tumours belong to the domain of Surgery. However, it will probably be a long time before either medicine or surgery will discover the secret of their cure.

The *fifth* and last chapter of our author's work is employed upon the progress, the duration, the prognosis, and the complication of encephalitis. Betwixt the most acute, and the most chronic encephalitis, there is a vast number of intermediate gradations, consequently its progress must be various. In youth it is rapid, in age slow.

M. Bouillaud will say nothing positive upon the duration of encephalitis, but he presents us with the following table, which points out the period at which each of his forty-four patients died, whose cases were reported in the first part of the volume:

During the first week, (septemaire) - -	9
During the second week, - - - -	6
During the third week, - - - -	6
During the fourth week, - - - -	2
During the fifth week, - - - - -	3
After two or more months, or even after one or more years. - - - - - -	18
	44

In the cases of the first class, the symptoms were palsy, convulsions, loss of memory, delirium, headache, coma, loss of speech, epileptic fits, deranged intellect, furious delirium, alternating with collapse, and melancholy. The *post mortem* appearances were inflammation of the anterior lobes and arachnitis, redness of the brain, serum in the ventricles—blood, hydrocephalus, softening (ramollissement), encysted effusion of blood, congestion of blood, and suppuration of medullary matter.

In the cases of the second class, the symptoms were, stupor, contortion of the face, general agitation, increased sensibility, convulsions, coma, tetanus, palsy, with rigidity of the left limbs, loss of speech, palsy of the bladder and rectum, cramps. The following were the appearances on dissection: infiltration of blood, superficial inflammation, suppuration of membranes, incipient softening, arachnitis with hydrocephalus, suppuration, encysted abscess, injection of blood.

In the cases of the third class, the symptoms were, coma, convulsions, rigidity of the left limbs, alternate delirium, and coma, delirium, strong fever, pus from the ear, palsy of the eye-lids, palsy, and rigidity of the limbs of one side, and convulsions of the other limbs. The appearances after death were inflammation of the anterior lobes, softening, redness, infiltration of blood, arachnitis, tubercles, slight hardness, abscess, caries and suppuration of the potreus portion of the temporal bone.

In the cases of the fourth class, the symptoms were, loss of feeling and motion in the left limbs, retention of urine, numbness of the right arm, and imbecility. The appearances on dissection were effusion of blood, with inflammation, and softening round it, and albuminous granulations.

In the cases of the fifth class, the symptoms were, hemiplegia of the left side, palsy with rigidity, confused intellect, coma, convulsions. Dissection showed effusion in the right hemisphere, with white softening round it, abscess with surrounding redness.

In the cases of the sixth class, the symptoms were, occasional derangement and stupidity, coma, convulsions, palsy, loss of speech, idiotism, hemiplegia, loss of memory, apoplexy. Dis-

section showed inflammation, and softening of the cineritious substance, pus in a cavity, inflammation, and ulceration of the membranes, general congestion of the brain, two vast abscesses, encysted abscess, effusion of serum into the ventricles, steatomatous and encysted tumours, hardening of the brain, tubercles, and cancer.

The above table would have been more valuable, if the patients had all died of pure and simple encephalitis; but of the whole number, scarcely more than two were of that description. M. Bouillaud thinks, that a circumscribed inflammation of the brain is not in itself attended with much danger; but it tends to disorganize the portion of brain, in which it is seated, and to paralyze, in the opposite side of the body, the parts which draw from the affected place the principle of their voluntary motions, or of their sensations; and an accident of this kind is one of considerable alarm.

Inflammation of the brain may be combined with almost any other malady; and whether we look to a diagnosis, prognosis, or treatment, complications of such a kind are deserving of our most serious attention.

We are no particular friends of Broussais, or the generality of modern French dogmatists, but we are much inclined to believe, that accidental productions found in the brain, owe their origin to inflammation, or to misdirected efforts of the plastic power of Nature. Of irritation, we speak with less confidence; but it seems to be something similar to the acrimony of the fluids of a former age; and some such thing may occasionally be the exciting cause of inflammation. All this is well. But when we find our author making such a pother about Broussais, and his wonderful discoveries, we are half-inclined to imagine that the great Haller never existed, and that such a man as John Hunter never lived. And when we hear him descanting upon encephalitis and arachnitis, we doubt if there ever was such a disease as phrenitis; and we must have dreamt of reading in Van Swieten, that the membranes of the brain, and the brain itself were inflamed in cases where the patients had been delirious; scarce can we believe, that we have read in Burserius, that in a case of febrile mania, the external surface of the brain, and the cortical substance under it had been much inflamed. And, if we had not positive evidence of the fact, we could scarcely believe, that the older physicians combated phrenitis with the most active depletion, and the whole of the antiphlogistic regimen, in the same manner as M. Bouillaud combats encephalitis and arachnitis. All we can find, then, that our author and his coadjutors have done is, that they have distinguished accurately

betwixt encephalitis and arachnitis, a circumstance which leads to no improvements in practice, but for which, as citizens of the world, we very willingly allow, that we have been mainly indebted to the French. We may add, that our author's work is respectably executed, and valuable for its cases, if they can be implicitly relied on.

ART. VII.—*A Manual of the Elements of Natural History*, by J. F. BLUMENBACH, Translated from the tenth German edition. By R. T. GORE, M.R.C. &c. pp. 415. 8vo. with plates, 1825. London, Simpkin and Marshall.

> "It is, indeed, remarkable for its clear arrangement, and for the immense quantity of interesting and valuable information it contains, condensed into a small compass. It is, altogether, the best Elementary book on Natural History, in any language."
>
> LAWRENCE'S LECTURES.

After this opinion, upon the high authority of Mr. Lawrence, which stands as an appropriate motto to the book, our critical spirit is almost entirely disarmed, and having almost no choice left, we must coincide. It is fortunate, however, that, independent of the justly celebrated name of the author, we should have been induced from the intrinsic merit of the work, to give it our unqualified approbation as a clear, succinct, and scientific arrangement of the three great kingdoms of Nature. The term Natural History has lately been too much confined to mere zoology, exclusive of the two other great branches of botany and mineralogy. Even zoology has been too much confined to quadrupeds, birds, and fishes, to the exclusion of insects, and the extensive tribes of vermes, crustacea, and animalculæ. Blumenbach has thought differently of the relative importance of those branches, and has given a neat and accurate view of each in order, beginning with man, and ending with minerals and petrified remains.

We only know one English work which bears any resemblance to the one before us—we mean Stewart's Elements, which is the text book used in the University of Edinburgh; but though it is twice as large as this of Blumenbach, it is confined entirely to zoology, in the more extensive meaning of the word. One advantage it decidedly possesses, that of illustrating the British zoology in preference to the foreign, and particularly with respect to insects where it was most wanted. With respect

to minerals, which Mr. Stewart's work does not touch upon at all, Mr. Gore, the translator, tells us, that "Blumenbach has, for the most part, mentioned the German localities only, of the various minerals described. To those who might think that the deficiency should have been supplied, as far as regards our own country, it may be sufficient to mention, that such an undertaking, besides adding materially to the length of the work, would have rendered some changes in the arrangement necessary, and did not appear altogether essential in a work which lays no claim to the rank of a systematic one."

We should, were we hypercritical, be disposed to differ a little in opinion with the learned translator upon this character of the work, and say that we do consider it to be most strictly systematic, if that word means, as it usually does, "methodical," or "orderly." It is not, indeed, filled, like Buffon, with long details, but the arrangement is complete, and the descriptions most strictly systematic, as we shall immediately see in the extracts to be given. The translator is certainly correct in his opinion respecting the illustrations of the British localities of minerals; for in this part of his subject the Professor seems to be less at home, and considerable changes would have been required; yet we think, that within the present compass, many of the most interesting British localities might have been introduced without much trouble, or without adding many pages to the bulk of the volume.

From the specimens which we shall now give, our readers will perceive, that the translation is most accurate and excellent, and that this is the only work hitherto published which will at once give a brief and a scientific view of the whole range of Natural History. As a book for ready reference, it is invaluable.

Rejecting in some measure the arrangements of former naturalists who have given various classifications of quadrupeds, Blumenbach has proposed a new one, which has been adopted and been gaining ground in scientific works for several years. We shall extract this arrangement along with what he has given as his reasons for the change.

"Eminent naturalists have suggested various artificial systems for the classification of mammifera; and founded them on particular characters devoted to that purpose. Aristotle's arrangement, for instance, is founded on the difference of the toes and claws, and has been adopted and extended by Ray and others. But in this way it is necessary to separate the closely connected and very similar species of ant-eaters and sloths, and to place them in very different orders, merely because the one has a toe more, and the other a toe less. Linnæus selected the teeth as his basis of classification; which, however, is not less liable to

the objections of producing, at one time, the most unnatural separations, at another the most extraordinary approximations. The bat genus must, in his system, from the differences of the teeth in some species, be divided among at least three orders; also the two species of rhinoceros. On the contrary, the elephant is placed in the same order with the armadillo and manis.

"I have therefore attempted to form a more natural system of mammifera; in doing so, I have looked to the general habit of these animals, but particularly to their organs of motion, in the formation of the orders, as being most open to inspection, and correspondent to the general habit. Two of these orders, including many animals, I have again subdivided into families, according to the difference presented by their teeth, and designated them by the names of some of the Linnæan orders. The whole class, therefore, is arranged in the following manner:—

Order I. BIMANUS. Man, with two hands.

II. QUADRUMANA. Animals with four hands. Apes, baboons, monkeys, and makis. (Lemans.)

III. CHIROPTERA. Mammiferous animals, in which the fore feet form membranes for flying. Bats.

IV. DIGITATA. Mammiferous animals, with separate toes on all four feet. This order is divided according to the differences of their teeth, into the following three families:

(A.) *Glires*.—With teeth like those of the mouse, squirrel, dormouse, and other mice; the marmot, guinea-pig, jerboa, hare, porcupine.

(B.) *Feræ*.—Carnivorous animals, properly so called, and some other genera with teeth of the same kind—lions, dogs, &c. The bear, weasel, civets, opossums, hedge-hog, shrew, mole.

(C.) *Bruta*.—Without teeth, or at least without fore teeth, &c. Sloths, ant-eaters, armadilloes, manis.

V. SOLIDUNGULA. The horse, &c.

VI. BISULCA. Ruminating animals, with cloven feet.

VII. MULTUNGULA. Mammiferous animals, for the most part very large, unshapely, with bristles or scattered hairs, with more than two toes on each foot. Swine, (which have usually four toes) the tapir, elephant, rhinoceros, hippopotamus.

VIII. PALMATA. Mammiferous animals, with feet made for swimming. Subdivided according to the different forms of teeth, into three families, as above.

(A.) *Glires*.—The beaver.

(B.) *Feræ*.—Seals, otters, &c.

(C.) *Bruta*.—Duck-billed animal, walrus, manati; and from these the most suitable transition is to the order

IX. CETACEA. Whales, warm-blooded animals, which have nothing in common with cold-blooded fishes; but the names, and the natural connexion of which with mammifera, was correctly remarked, even by RAY."

Objections might easily be made to this as well as to any other arrangement, whether it be called natural or artificial. Natural arrangements, as they are termed, are usually much more involved and artificial, than those which are expressly formed for the purpose of reference more than as a scale recognized by Nature. This, however, is sufficiently simple for systematic classification, and has, in this point, an advantage over the dental one of Linnæus, or the osseous and carneous one of Blainville—the latest with which we are acquainted. We think that our author's improvement of the Linnæan arrangement in ornithology, is equally simple and good.

"As the general form of birds is tolerably uniform, and certain parts of their body, as the bill and feet, which are connected with their mode of life, food, &c. influence their total habit very materially, most ornithologists have grounded their classification on the differences of one or other of those parts. Klein, for instance, on the form of the toes; Mohring, on the coverings of the legs; Brisson, on both, in combination with the nature of the bill, &c. Linnæus, in the plan of his system of birds, also adopts several parts in combination, with, in general, a reference to the total habit; although, in its practical application, he appears at times to have been forgetful; at least, it is impossible to understand how parrots, humming-birds, and crows, should be placed in the same order; or why he should have placed doves and the common fowl in two separate ones, with other approximations and divisions of the same nature.

"I have, therefore, allowed myself to make some deviations from the Linnæan system, and endeavoured to divide the whole class among the following nine orders:—

(A.) LAND BIRDS.

Order I. Accipitres. Birds of prey, with strong, hooked beaks; mostly with short, strong knotty feet, and large crooked sharp claws.

II. Levirostres. With short feet, and very large, thick, but mostly hollow, and therefore light, bills. Parrots, Toucans, &c.

III. Pici. With short feet, moderately long and small bills, and the tongue sometimes worm-shaped, and sometimes thread-like. The wryneck, woodpecker, creeper, humming-bird, &c.

IV. Coraces. With short feet, and the bill moderately long, tolerably strong, and convex above. Ravens, crows, &c.

V. Passeres. The singing birds, with swallows, &c. The feet short, the bill more or less conical, pointed, and of various lengths and thickness.

VI. Gallinæ. Birds with short feet, the bill somewhat convex above, and having a fleshy membrane at the base.—I have placed the doves in this order, as they are far more

closely connected with the Gallinæ than the Passeres; among which Linnæus had placed them.

VII. STRUTHIONES. Large land birds, unsuited for flying. The ostrich, cassowary, and dodo.

(B.) WATER BIRDS.

VIII. GRALLÆ. Birds found in marshes, with long feet; long, and almost cylindrical, bills, and generally a long neck.

IX. ANSERES. Swimming birds, with oar-like feet, a short bill, covered with skin; generally serrated at the edge, and terminated at the extremity of the upper bill with a little hook."

This we think a considerable improvement on the Linnæan ornithology; and it is much more simple than that of Blainville. Our author has kept to the Linnæan arrangement of amphibia into reptiles and serpents, though we think the newer system superior, which distributes them into chelonea, sauria, ophidia, and batrachia. He has not followed Linnæus in the two first orders of fishes; and he well remarks, that notwithstanding the labours of Lacepede, and others, ichthyology is behind the other branches of natural history in this respect. We shall quote his classification of fishes.

"The systematic classification of fishes appears to stand in need o- much improvement. In the meantime they are arranged in two principal divisions, viz. :—

(A.) Cartilaginous fishes, (pisces cartilaginei,) without true bones: and—

(B.) Bony fishes (pisces spinosi) having bones; fishes properly so called.

The cartilaginous fishes are divided into the following two orders, which M. de Lacepede has established, according to the presence or absence of the covering of the gills, (operculum,) and has divided the genera which they include, accordingly:—

Order I. CHONDROPTERYGII. Without an operculum.

II. BRANCHIOSTEGI. With an operculum. Linnæus has arranged the osseous, or true fishes, according to the character and position of the ventral fins: viz.

III. APODES. Without ventral fins.

IV. JUGULARES. Having the ventral in front of the pectoral fins.

V. THORACICI. Having the ventral immediately below the pectoral fins.

VI. ABDOMINALES. Having the ventral behind the pectoral fins."

The succeeding arrangements, followed by Blumenbach, are those which are well known, and do not require to be extracted. But we shall give a specimen of his manner of treating the

details of his subject, and we cannot select a better than his account of intestinal worms, which he describes as—

" Long worms without any evident external organs of motion.

" Most of them have a cylindrical or ribbon-like body. The intestinal worms of the human body, the spermatic animalcules excepted, all belong to this order.

" I. GORDIUS. Hair-worm. *Ger.* Fadenwurm.—Corpus filiforme, teres, æquale, læve.

1. *Aquaticus.* (Seta equina.) G. pallidus extremitatibus nigris.

A span long, and as thick as strong twine. In muddy ground and in water. Occasionally, also, like the following tropical species, in the ulcers of men.

2. *Medinensis.* (Dracunculus. Vena Medinensis.) The Guinea-worm.—G. totus pallidus.

(SLOANE. *Nat. Hist. of Jamaica.* Vol. II. Tab. 134. fig. 1.)

On the coasts of the Persian Gulph, in Egypt, the East and West Indies, Guinea, &c. It is as much as three feet in length. It shews itself under the skin, particularly about the ancles, knees, elbows, &c. where it causes painful boils, inflammation, &c. In extracting it, great care is necessary to avoid breaking it, an operation of this kind often lasting for several weeks.

" 2. ASCARIS. Corpus æquale teres ore trinodo, intestinis conspicuis.

1. *Vermicularis.* A. cauda subulata, cute ad latera corporis subtillissime crenata.

Lives in the rectum of man, and sucks with its obtuse extremity.

2. *Lumbricoides.* (Lumbricus teres.) The Round worm.—A. cauda obtusa, ani rima transversa, intestina aurantio.

The most common of the human intestinal worms : found principally in the small intestines, and sometimes in vast numbers.

" 3. TRICOCEPHALUS. Corpus inæquale, teres ; antice capilliare, postice incrassatum.

1. *Dispar.* T. supra subcrenatus, subtus lævis, anterius subtillissime striatus.

In the large intestines of man ; sucks with its small capillary extremity.

" 4. ECHINORHYNCHUS. Corpus teres, proboscide cylindrica retractyli echinata.

1. *Gigas.* E. candidus, collo nudo, proboscide vaginata ; aculeorum uncinatorum ordinibus pluribus, papillis suctoriis senis.

(GOEZE *Eingeweidewürmer,* Tab. 10. fig. 1, 6.)

In the intestines of the domestic hog.

" 5. LUMBRICUS. Corpus teres annulatum, longitudinaliter exasperatum aculeis conditis.

1. *Terrester.* The earth worm. *Ger.* der regenwurm.—L. ephippio circulari, 8 seriebus aculeorum abdominalium.

The well known animal so injurious to young vegetables. A true subterraneous animal, under the skin of which another species of intestinal worm (Ascaris *minutissima*) fixes itself.

2. *Variegatus.* L. rufus, fusco-maculatus, sexfariam aculeatus.
BONNET. *Tr. d'Insectol.* 2 (Æuvr. Vol. I.) Tab. 1. fig. 1, 4.)

A beautifully coloured animal, about an inch and a half long, and living in ditches, graves, &c. It, as well as the common earth worm, has great powers of reproduction. A twenty-sixth part of the animal cut off, is formed within a few months into a perfect one of its original length. Its natural increase is effected either by producing living ones, or casting them off like buds.

" 6. FASCIOLA. Corpus gelatinosum, planiusculum, poro ventrali duplici.

1. *Hepatica.* The fluke. *Ger.* die egelschnecke. *Fr.* la douve.—F. depressa, ovata fusca, antice tubulo instructa.
(J. C. SCHAFFER's *Egelschnecken.* fig. 1, 8.)

In the biliary ducts of the sheep, and many other herbivorous quadrupeds.

2. *Intestinalis.* F. corpore tæniolari marginibus undulatis.
(*Journal des Savans.* 1726. p. 102.)

Like a small ribband, and not articulated. Found in the abdomen of many fishes, and even alive after they have been cooked.

" 7. TÆNIA. (Lumbricus latus.) Tape-worm. *Ger.* Bandwurm. *Fr.* Ver solitaire.—Corpus planiusculum, geniculatum. Os quadrilobum.

An extensive genus, notable as well for the peculiarities of its structure, as for the obstinacy and variety of the symptoms which the undermentioned species cause in the human body. This worm is articulated, and attaches itself to the intestinal canal, by means of the pointed proboscis projecting from its head with four lobes. Next to the head, at least in the following species, is a small, almost thread-like neck, the joints of which become gradually larger as they approach the body. In each of the larger joints, which form by far the greater part of the animal, is an ovarium, generally of a very elegant form, foliated, &c., and from which the ova escape through one or two openings placed at the edge, or on the flat surface of the animal. This worm is by no means *solitaire,* several of them being often found in a single man or beast.

1. *Solium.* T. humana articulis oblongis, orificio marginali solitario, ovario pinnato.

This species is the most common in Germany. As well as the next, it is found in the small intestines of man.

The *Vermes cucurbitini, Ascarides* COULETI, are the detached posterior joints of this animal.

2. *Vulgaris.* (Bothriocephalus *latus.*) T. humana articulis abbreviatis transversis, orificio laterali duplici, ovario stellato.

In other parts of Europe. Very common in Switzerland and France.

" 8. HYDATIS. Corpus tæniforme desinens in vesicam lymphaticam. Os quadilobum.

The head and forepart of these very remarkable animals, which are mostly found in the viscera of various mammifera, bear a considerable resemblance to those of the tape-worms. The posterior extremity terminates in an oval bladder of various size.

1. *Finna.* (Cysticerus *cellulosæ.* RUDOLPHI.) H. conica, vesicæ duplici inclusa, interiori basi sua adhærens, capite versus collum vesicæ directo.

(*Abbild. Nat. Hist. Gegenst.* Tab. 39.)

Rarely found in the muscles, brain, &c. of man and apes. On the contrary, very common in hog's flesh.—MALPIGHI established its animal nature beyond all doubt. The fact of its being found in the swine which man has domesticated, and not in the wild race, appears to furnish an instance of organized bodies which have been formed long after the general creation.

2. *Globosa.* H. simplex ovata, corpore distincte articulato, rugoso, imbricato.

(GOEZE. *Eingeweidewurmer.* Tab. 17.)

The bladder is often larger than a hen's egg. It is very common in the liver and peritoneum of swine.

3. *Cerebralis.* H. multiplex, corpusculis pluribus, cauda biseta vesicæ communi ad natis.

(LESKE *vom Drehen der Scafe.* Leipz., 1780. 8vo.)

In the brain of sheep affected with the staggers.

4. *Erratica.* H. multiplex, corpusculis pluribus, ovatis vesicæ communi innatantibus.

(*Abbild. Nat. Hist. Gegenst.* Tab. 79.)

I found this species in the tumid Hydatis contained in the viscera of a Macaco (Simia *cynomolgus.*)

"9. SIPUNCULUS. Corpus teres elongatum. Os anticum, attenuatum, cylindricum. Apertura lateralis corporis verruciformis.

1. *Saccatus.* (Vermis *microrhynchoterus.*) S. corpore tunica laxa induto.

(C. GESNER. *Hist. aquatil.* p. 1226.)

In the East Indian Seas.

"10. HIRUDO. Leech. *Ger.* Blugetel. *Fr.* Sangsue—Corpus oblongum, promovens se ore cordaque in orbiculum dilatandis.

1. *Medicinalis.* H. depressa nigricans, supra lineis flavis 6; intermediis nigro-arcuatis, subtus cinerea nigro maculata.

(DILLENIUS, in *Eph. N. C.* Cent. 7 Tab. 5.)

The most serviceable species for blood-letting, and on that account a considerable article of trade in some places.

2. *Octoculata.* H. depressa fusca, punctis 8 nigris supra os.

(*Schewd. Abhandl.* 1757. Tab. 6. fig. 5, 8.)

It lays a single egg, which at first contains only lymph, but producing 8, 10, or more young ones."

From this very ample quotation our readers will see the plan of the work, and the accuracy of the translation, and we conclude by again recommending it as the only book in the language which comprehends a concise, systematic, and scientific view of animals, plants, and minerals.

ART. VIII. *Medico-Chirurgical Transactions.* Vol. XIII. Part I. London, 1825. pp. 304.

The Medico-Chirurgical Transactions are still the most valuable of all our periodical publications, and we rejoice to see another part of them pass under our review.

The first article, by Mr. Key, surgeon to Guy's Hospital, is a case of axillary aneurism successfully treated by tying the subclavian artery, in which, however, there is nothing very interesting, except that the operation was successful. The only thing peculiar in the operation was, that Mr. Key divided about three-fourths of an inch of the clavicular portion of the sterno-mastoid muscle, which gave him considerable facility in getting at the artery. The author seems to pride himself a little on this circumstance, as it had been expressly condemned by some of our best writers.

The patient was an extra tide-waiter, and the aneurism was the consequence of a sudden exertion with the right arm. When Mr. Key first saw him, the man was in good health, and every thing was favourable for an operation; but in consequence of a surgeon having employed pressure to the subclavian artery, and to the tumour, a train of very bad effects followed, which made an operation precarious, but absolutely necessary for the preservation of life. We shall not describe the operation, nor the subsequent treatment, but we think it right to extract the following remarks, as of practical utility.

"The only circumstance that ought to deter the surgeon from putting a ligature around any artery in the human body (I will not except the aorta) is, the uniform cessation of circulation in the parts below the ligature. That this is a rare occurrence after the subclavian operation, surgical records will prove; within my own experience, the operation has been performed three times without the least tendency to that state. The cause of death must, therefore, be sought for in circumstances not necessarily connected with the operation, and which may consequently be avoided. The most common causes of death, I believe, will be found to be, suppuration in the anterior mediastinum, in consequence of the violence done to the parts during the operation; and inflammation of the pleura, with consequent effusion into the cavity of the thorax. The former may be attributed solely to the injudicious disturbing of the reticular membrane connecting the artery with the scalenus anticus and with the pleura. This reticular texture will be found to be continuous with a similar texture in the anterior mediastinum, and inflammation set up in the former quickly spreads through the latter, in consequence of the free communication of the cells. In performing the operation the surgeon may altogether avoid this danger, by confining the point of his director or aneurismal needle to that part of the artery which lies upon

the rib; the pulsation is here more readily felt, the situation of the vessel more easily ascertained, and the artery is more accessible to the ligature, than where it is emerging from behind the scalenus muscle. Inflammation of the pleura is to be apprehended, more from the advanced state of the disease prior to the operation, than from injury done during its performance. The extent of the sac, which quickly attains a great size in consequence of the loose texture of the cellular membrane under the pectoral muscle, causes great local irritation, by its pressure on the axillary nerves, and the effect of irritation upon a nerve in producing inflammation in the part to which it is distributed, is happily illustrated by Mr. Brodie's experiment on the par vagum. By its pressure on the neighbouring veins, the sac also induces a general œdematous effusion, in which the pleura often partakes; and from the peculiar termination of the bronchial veins on the left side of the body, serous effusion from the pleura pulmonalis, when the disease exists on that side, may be regarded as a probable occurrence. In a patient, on whom I performed the operation in the Winter of 1822, and who lived till the seventh day, the appearances I have alluded to were present, and the pericardium was highly inflamed and lined with a coat of adhesive matter."

ART. 2.—*Case of Tumour in the Anterior Mediastinum, containing bone and teeth.* By J. A. GORDON, M.D.

The tumour presented the appearance of aneurism of the aorta. The patient died after long suffering. The contents of the tumour

"Were, serous fluid, sebaceous matter, mixed with hair, the latter not in large quantity nor in distinct locks, and an apparently fatty mass at the bottom, which, being cut open, proved bony, and on more careful examination, a bone was detected very nearly resembling the upper maxillary, a portion of alveolar process which might seem to belong to the upper or lower maxillary, and seven teeth, two cuspidati, two incisores, and three molares. One of the cuspidati has its crown perfectly covered with enamel, and freed from its capsule; the other is covered with the capsule, but is removed from its socket without any connexion. The molares are in their sockets imperfectly formed, while the incisores are by means of their capsules attached to what at first appeared fat, but which, on closer examination, seems to possess the character of palatine membrane."

Several similar instances are on record.

ART. 3.—*A Case of Injury to the Blood-vessels of the Lower Extremity, producing pale dry Gangrene.* By T. W. CHEVALIER, Esq.

In this case, an extensive wound in the groin, from the shaft of a van, against which the patient had ridden with great violence, by which the femoral vessels were laid bare, was followed by loss of sensation in the foot and leg, and discoloration below the patella. On the eighteenth day after the accident, hæmorrhage

took place from the wound. The vessels were secured, but the patient died the same morning. The patient latterly suffered great pain. He was treated with decoction of bark and sulphate of quinine.

It may be agreeable to the reader to have the dissection of this case.

"The arteries were all impervious in the neighbourhood of the wound; but the inguinal, the femoral, and the profunda veins were found separated by ulceration, and terminating by open mouths in the depth of the wound. These vessels had all been tied, so that the patient died from constitutional debility, the effect of an intemperate life, of the injury in his groin, and of the loss of blood previous to the operation, with that of about a pint and a half which escaped rapidly while it was being performed. The muscles of the leg were rather livid when first exposed, but not at all disorganized. It is remarkable that, although there were some traces of florid blood in the anterior tibial artery, the femoral was found distended below the seat of the wound, with blood of the deepest modena hue. The colour of the calf of the leg has become very much darker since yesterday morning.

"This patient's sensibility to warmth, applied but just above the desiccated parts of his foot (although it was insensible to all other impressions) proves its nerves to have retained to the last some degree of vitality: and it may be worthy of inquiry, whether the drying of his toes, their cuticle remaining on, and the rapid desiccation of the limbs of some other patients, are not to be attributed (rather than to evaporation alone) to some degree of activity remaining in the *absorbents* of their affected limbs.

"The state of this patient's limb, and the history of his case demonstrate that the powers of his constitution were expended to no beneficial end; no effort being made to separate the dead parts from the living, whilst the remains of life in the calf of his leg were to be preserved.

"In conclusion, I may mention an observation of my father's, which I find confirmed in the writings of others, that the pale, or white dry gangrene, as it is more commonly called, takes place only where the veins of the parts affected are not obliterated; and that, on the contrary, the black dry gangrene is one result of the obliteration of both sets of blood-vessels."

ART. 4.—*Case of Ulceration and Rupture of the Stomach.* By J. ELLIOTSON, M.D. Cantab.

This is an interesting case. The patient, a female, lived till the fourth day. She was relieved by the use of laudanum; blood-letting gave no relief. The dissection shewed extensive inflammation of the bowels. The aperture was in the anterior part of the cardiac half of the stomach, and was large enough to admit the end of the little finger. Extensive ulceration was discovered in the internal surface. Sudden and most acute, but not *unremitting* pain, (as Mr. Travers thought) was the principal

symptom. The same thing was observed by Boerhaave in a case of ruptured œsophagus.

ART. 5.—*On a new Cavity of Extra-Uterine Pregnancy.* By G. BRESCHET, M.D. Paris.

This is a curious case, where the fœtus was contained in the substance of the fundus uteri. About the third month the fœtus escaped through a rupture of the uterus into the abdomen, and caused the death of the mother. There are few other cases of the same kind on record. Dr. Breschet offers several explanations, but they are so absurd, that he does not himself seem to think them correct.

ART. 6.—*A Case of Fallopian Tube Pregnancy.* By JOHN ELLIOTSON, M.D. Cantab.

At the sixth week the mother died. The fœtus was found in the abdomen, with the remains of the ruptured tube. It appeared as if the Fallopian tube had been ruptured with considerable violence, probably by some action of its own. Such cases are common; but from the agreeable manner in which he writes, Dr. Elliotson has contrived to render this one interesting.

ART. 7.—*On the Ligaments of the Human Ossicula Auditus.* By T. W. CHEVALIER, Esq.

Mr. Chevalier appears to have examined these minute ligaments with much care, though he does not convey a very distinct idea of them to the reader: yet we ought to be thankful for even the slightest information on such difficult points; for every item added to the anatomical knowledge of minute, but important, organs, must add to our knowledge of those diseases, and enable us the more easily to cure them. Almost any extract we could give from Mr. Chevalier's paper would be unintelligible without plates.

ART. 8.—*Observations on the Saliva during the action of Mercury on the System.* By JOHN BOSTOCK, M.D.

From his experiments, Dr. Bostock found that the saliva during ptyalism contained no mercury; and it seemed as if the use of mercury had the power to change a mucous secretion into the nature of a serous one. In the saliva during ptyalism he could trace neither alkali nor acid; but, after the effects of mercury had gone off, he found the saliva of the same patient impregnated with an uncombined acid.

It would be injustice to the author, however, not to let him be heard upon this subject.

"The conclusions," he observes, "which we may draw from the above experiments, on the nature of the saliva discharged while the system is affected by the action of mercury, are sufficiently remarkable

to arrest our attention. We learn from them, in the first place, that no portion of the mercury is actually present in the fluid, from which it follows that the effect of this medicine, although so remarkably manifested upon the salivary glands, must be produced through the medium of the system generally, and hence we may presume that all the organs destined for the secretion of mucus will undergo the same change. This change would appear to consist essentially in the conversion of the animal matter, from the state of a mucus to that of a serous, or rather of an albuminous fluid.

"Now, although we are not sufficiently acquainted with the theory of secretion to know what are the minute operations which enable the capillary vessels connected with the glands to produce their appropriate fluids, yet we may form some idea of the relation which they bear to each other, as far, at least, as regards the greater or less complexity of the process. All those fluids, for example, which proceed from what are termed serous membranes, appear to differ from the serum of the blood solely in the proportion of albumen which they contain, and we may therefore conceive that they are generated by a process resembling transudation, and that this is, in a great measure, of a mechanical nature. In the secretions, however, which are discharged from the mucous surfaces we find a change effected which is of a chemical nature, where a new substance is generated which did not previously exist in the blood. In what way the vital functions act, so as to convert albumen into the mucilaginous matter which forms the basis of saliva is, at present, beyond our power to ascertain; but whatever it be, we find that in the case before us, the operation of mercury upon these parts is to counteract the ordinary secreting process, and to reduce the action of the glands to that of mere transudation."

Dr. Bostock has added to his paper, experiments upon the mucus expectorated by a person labouring under a severe catarrhal affection.

Art. 9.—*Case of Fungus Hæmatodes of the Brain.* By John Hunter, Esq., Jun.

This is an interesting case, where the patient, a young female, was affected for nearly four years with pain in the head, and for nearly five years before her death with convulsions, blindness, deafness, and general derangement of the system. Mercury was tried during the latter period, but apparently with the aggravation of the convulsions. Dissection shewed that fungus hæmatodes of a great portion of the brain and cerebellum had been the cause of the above-mentioned symptoms. The membranes were not affected.

Art. 10.—*On a new Preparation of Croton Tiglium.* By John Pope, Esq.

Mr. Pope supposes that the nausea and griping so often attendant on the use of this article, depends upon the oil being

expressed from the medulla of the seed, without previously stripping off its epidermis and husk. He recommends the use of the alcoholic tincture, which is made by digesting two ounces of the pure medulla of the croton tiglium in twelve ounces of alcohol (sp. grav. 836°) for six days. The dose of the filtered tincture for an adult is about twenty minims. No experiments have as yet satisfactorily proved the effects of the husk and epidermis used by themselves. Mr. Pope has known the croton tiglium evacuate the bowels after every other medicine had failed; a fact which, from our own experience, we can corroborate.

ART. 11.—*Remarks on the Diagnosis, and on the Inversion of the Foot, in Fracture of the Neck, and upper part of the Thigh-bone.* By G. J. GUTHRIE, Esq.

Mr. Guthrie, from two cases, has found that the mere circumstance of the toe's being turned, is no proof of the bone being dislocated, instead of its neck being fractured. He supposes that the inversion or eversion of the toes must depend on the exact point at which the fracture takes place.

"When," he says, "the fracture has taken place in such a manner as to be external to the insertion of these rotators, (the pyriformis, the gemellus, the obturator internus and externus, and the quadratus,) outwards, yet sufficiently within the insertion of the glutæus medius and minimus, so as not to deprive them of their due action (as in the case of Sarah Gibson), the toe will be turned inwards, and must always be so; or remain without any alteration of position, according to certain variations in the inclination of the fracture affecting the power of these muscles. The effect which the breaking off the little trochanter, together with the attachment of the psoas iliacus muscles, had on the position of the limb, must have been rather to assist the inversion of the toe than otherwise, but whether it be an essential part of the accident is to be determined by future observation.

"When the thigh is broken immediately below the little trochanter, the upper portion of bone is carried outwards and upwards, in a manner deserving of particular attention. The power of the rotators outwards being infinitely greater than that of the rotators inwards, which can now act; viz. the glutæus medius and minimus, the broken extremity of bone would be pointed directly outwards, if it were not modified by the action of the psoas and iliacus, partly assisted by the pectinalis, which cause it to take rather a diagonal direction upwards, or forwards and outwards, constituting then, in every case, a rising and displaced extremity of bone, which is the first step towards the shortening of the limb; a circumstance which has always been, although I conceive erroneously, attributed to the action of the long muscles inserted into the lower portion of the fractured bone. Those who have been conversant with amputation of the thigh at this part, will acknowledge the correctness

of the remark, and do not forget, in placing the fractured limb in position, that if it be convenient to follow the movement caused by the psoas and iliacus, it is not less necessary to attend to that which has been effected by the rotators outwards.

"When the thigh-bone is broken in any part below the little trochanter, the toes are turned outwards, provided the patient is placed in the extended position; [which arises principally from the weight of the limb, increased by that of the bed-clothes, and from the different effect produced by muscular action in fracture, to what takes place when the bone is in a state of integrity. The slight degree of influence the tensor vaginæ femoris can exert as a rotator inwards, is counteracted and invariably overcome. The long muscles and the adductor have lost the point d'appui and centre of motion afforded by the head of the femur, whilst the weight of the foot, at the extremity of the long lever of the leg remains, rather assist than retard, in the commencement of their action, the eversion of the fractured portion of the limb.

"The inferences to be drawn from these observations, are—

"1st. That whilst the eversion of the foot is characteristic of fracture, its absence does not indicate the non-existence of fracture.

"2d. That the inversion of the foot is equally characteristic of fracture as of dislocation, and is only distinguishable, with reference to these two different states, by comparison, or a due estimate of the degree of inversion:

"3d. That inversion of the foot does not take place in fracture within the capsular ligament, and that this symptom is rather diagnostic of a fracture through the trochanter major, a portion of it being continuous with the shaft of the bone."

It appears, however, that in the case of Sarah Gibson, the fact of the trochanter minor being broken off, tended not a little to assist in rolling the toes inwards, as by that fracture the power of two considerable rotations outwards was lost, viz. the psoas and iliacus muscles. The paper of Mr. Guthrie is, upon the whole, well worthy of attention.

ART. 12.—*On the Effects of Loss of Blood.* By MARSHALL HALL, M.D. &c.

This is rather an interesting paper. The author divides it into different heads; but the principal point he seems to have in view is, to call the attention of the profession to that re-action which follows repeated blood-letting, and which, if mistaken for inflammation, may lead to farther detraction of blood, so as eventually to destroy the patient. The author, we think, must be mistaken if he supposes that he is here pointing out a fact which is altogether new; for the greater number of practitioners are perfectly aware that loss of blood, or any thing else that can cause great depression, will be followed by a certain degree of re-action, unless the depression be so great as to exhaust at once the powers of the

system. Dr. Hall, however, has strengthened his positions with some instructive cases.

ART. 13.—*Cases in which the operation for the removal of Cicatrices from the Neck, consequent on Burns, was successfully performed; with remarks.* By J. H. JAMES.

These cases are two in number: one patient was nine, the other ten years of age; both females. In the first, the cicatrix "was large, broad, and dense, tying down the chin closely to the sternum, so that there was not an interval of more than an inch between them by measure: it was situate a little towards the left side, and the corner of the mouth was a good deal drawn down by it: it also projected much from the ordinary surface of the neck, so as to efface the projection of the chin.

"March 9, 1824.—I performed the operation in the following way: I made two incisions, one at either edge of the cicatrix, extending to its termination at the upper part of the sternum where they met; I then dissected up the flap, of which I removed no part, but having completely freed it, I found I was able to dispose of it out of sight under the chin. The distance between the sternum and the chin was now increased to at least three inches by measure."

During the cure, which was completed in about four months, the chin was supported first by a pasteboard, and then by a screw collar. The other cicatrix, which was of vast extent, and which also bound the chin to the sternum, was divided at its middle, incisions having been previously made at either edge. Both flaps were now freely detached, till "the girl could carry her chin horizontally, without dragging the integuments of the thorax." The flaps in both cases were kept down by adhesive straps and fillets; and bag poultices were applied under the screw collars. In the second case, when the cure was completed, the patient could raise her chin above the horizontal line.

ART. 14.—*Case of the simultaneous occurrence of Small-Pox and Measles, with remarks on Measles, as it prevailed epidemically at Exeter in* 1824. By P. C. DELAGARDE.

Mr. Delagarde begins his paper with some general remarks on measles. In the cure, he employed a warm temperature and a rigid antiphlogistic regimen. Fatal cases were from pulmonary inflammation.

The patient, the principal subject of the paper, was a boy of four years of age. He was attacked with measles on the first of April. The eruption appeared interspersed on the right cheek with a few small pimples. On the 4th, the brown marbled spots frequent after measles appeared on the breast and arms, and amongst them were distinct pustules. On the 10th, the pustules were turning on the extremities; and on the 11th the crusts

were separating. A child was inoculated with the matter of the pustules, and small-pox ensued. We see nothing very extraordinary in all this.

ART. 15.—*History of a case of Hydrometra and Dry Gangrene, occurring in the same individual, with some Observations on these Diseases.* By A. T. THOMSON, M.D. &c.

This is a learned paper. The subject of it a female, who had been given to intemperance, and liable to rheumatism, was admitted into hospital in consequence of a tumour occupying the situation of the gravid uterus. The left leg became affected with dry gangrene; amputation was performed; and the patient died on the third day. The womb was found to contain a great quantity of water, the os uteri being completely obliterated. The leg presented a uniform ash colour when cut into; not unlike the internal texture of some of the dry vegetable fungi. The aorta was found ossified, about two inches before its division into the iliac arteries. The left external iliac was ossified in several places. In many of the cases of dry gangrene, the arteries leading to the diseased limb have been found ossified and choked up with coagula; but in other instances no coagula have been found; probably, therefore, the ossification alone is capable of producing the dry gangrene.

At the conclusion of his paper, Dr. Thomson suggests the following corollaries:—

"1. That in incipient cases of dry gangrene, when the exciting causes are not obvious, benefit may be derived from treating them in the same manner as cases of gouty or rheumatic inflammation; in addition to the local stimulants usually employed: *i. e.* with calomel, tartar emetic, opium, colchicum, and Peruvian bark.

"2. That pure hydrometra, or an accumulation of a serous fluid in the cavity of the uterus, enlarged, and acquiring the character of a membranous sac, is a disease which occasionally occurs.

"3. That in no case of supposed ovarian dropsy, should a trocar be passed into the tumour, through the linea alba, without ascertaining by previous examination per vaginam the real nature of the tumour. For, as in the case before the Society, should the uterus be the seat of the disease, and the bladder of urine be attached to its anterior surface, and drawn up nearly to the umbilicus, the instrument would pass through that viscus, and might produce irreparable mischief.

"4. That the number of instances in which the disease has been cured by a spontaneous discharge of the fluid per vaginam, authorize the attempt to evacuate it artificially, either by dilating the os uteri, when it is only obstructed, or puncturing the sac, in the situation of that orifice, when it is obliterated."

ART. 16.—*Cases of destructive Inflammation of the Eye, and of Suppurative Inflammation of the Integuments, occurring in the puerperal state, and apparently from constitutional causes.* By MARSHALL HALL, M.D., and JOHN HIGGINBOTTOM, Esq.

The disease occurred from five to eleven days after delivery, and was always preceded by some serious indisposition. The disease varied in different individuals, but in all of them the left eye was the one affected. In every case the patient died, and, in general, there was destruction of the eye. All remedies appeared to be unavailing. The sinking of the vital powers alone seemed to suspend the course of this terrible disease; which, probably, has a constitutional origin. Dr. Hall has furnished us with five very interesting cases of it. In all of them there was, in different parts of the body, inflammation of the skin, ending in suppuration.

ART. 17.—*Case of Epilepsy, attended with remarkable slowness of the pulse.* By WILLIAM BURNETT, M.D.

The patient, an officer of the navy, aged 46, had attacks of the disease, with intervals of several years, till after 1821, when it became more frequent. The unusual symptoms were considerable dyspnœa, and a remarkable slowness of the pulse; at times the pulse did not exceed fourteen beats in a minute. Relief was generally obtained from medicines which corrected the state of the digestive organs. Latterly, anasarcous swellings have appeared in different parts of the body.

ART. 18.—*Some particulars of a remarkable Disease of the Heart, attended with partial discoloration of the skin.* By JAMES JOHNSON, M.D.

Mrs. A., aged 30, about seven years after the birth of her first and only child, was attacked with various symptoms, which are usually denominated nervous. About eighteen months before her death, she was attacked with inflammation about the womb and lower parts of the abdomen; and at the same time those parts of the body exposed to the air assumed the colour of a very dark mulatto, whilst the colour of other parts remained unchanged. Her appetite became very voracious, and she complained of breathlessness on the slightest motion. Her pulse could scarcely be felt at the wrist. She became subject to very distressing *heaving*, or inclination to vomit. Debility rapidly came on, and she died, after having suffered much inwardly for four days. On examining the body, the right ventricle of the heart was found much enlarged, and very thin in its parietes.

The parietes of the left ventricle were three-quarters of an inch thick, and its capacity so diminished as scarcely to admit the fore finger. The cava inferior was of a most extraordinary size. It seemed as if the left ventricle was incapable of throwing out more than two or three drachms of blood at each systole.

ART. 19.—*Case of Carotid Aneurism, successfully treated by tying the artery above the aneurismal tumour.* By JAMES WARDROP, Esq.

The patient, a lady of 75 years of age, had an aneurism of the right carotid, which made its appearance suddenly, and increased in size so rapidly, that by the eleventh day it was red and painful; and the parietes then became so thin, as to threaten bursting. The tumour was situated so low that it was impossible to pass a ligature betwixt the swelling and the heart. Under these circumstances, with the view of producing coagulation of the contents of the sac, it was determined upon to pass a ligature above the tumour.

"The operation consisted in making an incision through the skin and cellular membrane, rather more than an inch and a half in length, commencing it immediately above the tumour, and extending it on the tracheal edge of the mastoid muscle, and in the direction of the carotid artery, taking care to avoid the large superficial veins. The subsequent part of the dissection was chiefly made with a silver knife, guided by the finger, and there was no particular difficulty in reaching the artery but what might have been anticipated, from its great depth, from the necessary limits of the incision, and from the numerous large veins which were carefully to be avoided—particularly a branch which extended across the middle of the incision to the internal jugular, and which consequently diminished the space in which the artery was to be taken up. After a careful dissection, which was tedious from its being necessary to tear the parts with the silver knife, the artery was so completely separated from the adjacent parts, that the point of the finger could be readily passed between the vessel and the vertebræ, and the aneurismal needle was passed round the artery with a singular facility, taking care to avoid the par vagum, which was distinctly felt behind the finger. The vessel being previously ascertained to be healthy, one ligature was tied round it, as close to the tumour as the incision would admit, and the lips of the wound were stitched together by a suture, without any farther dressings. The aneurismal tumour was covered with adhesive plaster, in order to protect the tender skin, and at the same time to keep up a certain degree of pressure."

The most complete success followed the operation; the tumour gradually contracting and the neck recovering its natural form by the fifth week.

"Mr. Brenner's instrument (used to pass the ligature in the above

case) " consists of a flat canula, within which are contained three distinct but parallel springs, each spring being of the best possible temper, and capable of being made straight, or of assuming their original curved form, without either breaking or setting; when drawn within the canula, they are confined nearly in a straight line; and when projected from it, assume their natural curve; and thus a ligature attached to their extremity may be carried round any artery."

ART. 20.—*On the Medical properties of Subcarbonate of Iron.* By JOHN ELLIOTSON, M.D. *Cantab.*

Dr. Elliotson uses this medicine in very large doses, sometimes to the extent of half an ounce every eight hours. He gives several cases of chorea, where very great advantage followed its exhibition; and where, even in persons of a florid habit, a cure was effected in a short time. It also cured a case of paralysis agitans. He found that a scruple of the sulphate of iron made into pills with extract of gentian, is borne just as well as half an ounce of the subcarbonate. Dr. Elliotson takes occasion to mention, that the tartar emetic ointment, when rubbed on the legs, have generally produced pustules on the genitals. This effect we have never witnessed.

ART. 21.—*Notes of a case of Hydrophobia, with some Remarks on the Pathology of that Disease.* By GEORGE GREGORY, M.D.

The patient died convulsed about forty-three days after the infliction of the wound. On the day after death the body was opened.

"The spinal marrow throughout its whole extent was perfectly free of disease. There was some slight effusion of serum on the surface of the brain, and about three or four tea-spoonfuls of serum were contained within the ventricles. The choroid plexus was turgid with blood, and two very small soft tumours were found attached to it.

"The stomach and bowels were in a healthy state. The lungs were of a remarkably dark colour, as if gorged with venous blood. The whole body, it may be noticed, had become livid with remarkable rapidity, and to a very uncommon extent.

"The pharynx, epiglottis, and larynx—the œsophagus, for about the first three inches of its course—and the trachea, throughout its whole extent, appeared internally of a coffee-ground colour, or almost black. This blackness remained after the parts had been freely sponged. There was no thickening or swelling of the parts about the glottis. The structures were firm, nor could I detect any breach of surface in the affected membrane. I have since been informed, however, that an abrasion of the cuticular lining of the membrane was noticed about half an inch below the pharynx.

"The inner coat of the aorta, and large arteries immediately proceeding from it was of a bright scarlet colour. The heart and pericardium were healthy."

Dr. Gregory, from having observed the same appearances of the pharynx, &c. in another case, seems to be of opinion that the disease might be brought under the genus Cynanche.

"I would venture to suggest, therefore," he says, "that when a man has been bitten by a rabid animal, he should be closely watched about the end of the fourth week; and on the first appearance of any marks of nervous irritation, or uneasiness about the throat, those remedies should be adopted, of whatever kind, which the practitioner would have employed, had the real nature of the disease been unequivocally ascertained."

ART. 22.—*Account of the Effects of the bite of a wild Jackal, in a rabid state, as the same occurred in the district of Kattywar, in the East Indies, in* 1822. By M. HEWITT, Esq.

It appears that the animal had bitten several persons during the night, and in the greater number hydrophobia was the consequence. Several of them died without any medical assistance; but in two cases an attempt was made to bring on salivation by mercurial frictions on the throat, and by sprinkling calomel mixed with sugar on the tongue. In the first case, that of a woman, salivation was produced, and she recovered. She was suckling at the time. In the second case, the patient, a man, died before the salivary glands could be affected.

"The mouth and jaws of the jackal, when killed, were found to be covered with frothy saliva. The liver was examined, and found quite diseased and rotten, with pus in some parts from small abscesses."

The length to which our analysis of these papers has extended, leaves us no room to say any thing farther of their respective value, than that they will, though not all alike excellent, give sufficient evidence, that the Society has not reached its period of anility, which we sincerely hope is still at a great distance.

ART. IX. *The Works of* MATTHEW BAILLIE, M.D., *to which is prefixed an Account of his Life; collected from authentic sources.* By JAMES WARDROP.

In calling the attention of the profession to this work; it is not our design to enter on a minute or even general analysis of

their contents. The extent and variety of the matter they necessarily embrace, render it as impossible to comprise within our prescribed limits an analysis of the whole, as the familiarity of the profession with the principal part of their contents, renders such a task unnecessary. We shall, therefore, direct our attention only to such parts of the work as are most remarkable for interest or novelty.

The first of these volumes, to which is prefixed a biographical sketch of Dr. Baillie, from the classical pen of the editor, consists of short miscellaneous papers, mostly previously published by Dr. Baillie, either separately or in transactions of societies; but a few of which were found among his manuscripts after his decease. The second volume forms a new edition of his well known work on morbid anatomy, which varies from the preceding one, in a few additions and alterations, transcribed from the author's own copy; in being interspersed with occasional supplementary observations by Mr. Wardrop, who has also prefixed, as an appropriate introduction, some preliminary observations on diseased structures.

The life of Dr. Baillie, like that of most other men devoted to the cultivation of science, or engrossed in the routine of professional labour, is barren in diversity of incident or striking vicissitude; but the want of dazzling tinsel is amply compensated by interest of a higher order. The general feeling of regret manifested at the period of his decease, and the subsequent avidity with which information concerning him has been sought for; feelings not confined to the circle of his own friends, or his own profession, but in which the community at large have warmly participated, exceed the tribute paid to the memory of any other member of the same profession, within the period of our recollection. The real causes of this honourable distinction are, we think, to be found, not in the elevated professional rank he enjoyed, not even in the superiority of his talents as a practical physician, nor the value of his labours in the field of medical science, distinguished as he unquestionably was in all these respects; but mainly in the moral beauties of his character. He, in fact, presented a rare combination of moral excellence, consistently displayed in every part of his conduct, and every period of his career. Endowed by nature with a kind and warm heart, its impulses were not permitted to evaporate in empty wishes or idle aspirations of general benevolence, but were coupled with a constant alacrity to serve, and cheerful exertion to promote, the interests of others. With a winning address and gentleness of manner, that fitted him, in no small degree, for the elevated

circles in which he was destined to move, he united the more estimable qualities of sincerity, integrity, and political independence; plants rarely found to flourish in the rays of court favour. The unseen beneficence of his private life was manifested in numerous acts of benevolence, unrecorded, save in the bosoms of those who felt his generosity; whilst the munificent character of his public actions, bespoke a mind stamped in the elevated mould of his illustrious relatives—the Hunters. But in no respect does the character of Dr. Baillie command our warmer homage than as it appeared in his intercourse with his professional brethren. That dignified feeling which elevates its possessor above jealousy or hostility towards a rival; that sense of honour which disdains to breathe the most remote insinuation against his professional fame; candour ever ready to acknowledge contemporary merit; charity that loved to draw a veil over the errors of others; disinterested benevolence that delighted to extend the hand of patronage to those newly entered on the business of life; such were the amiable feelings and upright principles that adorned the professional career of Dr. Baillie; and will long endear his memory to that profession to which he was at once a sincere friend, a distinguished ornament, and a bright example.

Mr. Wardrop's sketch of the life of his departed friend, is a short but admirable specimen of biographical composition. It is replete with manly and judicious sentiments, conveyed in singularly chaste, elegant, and energetic language; and presents a lively and natural portrait of character; a pleasing contrast to that insipid monotony of elaborate panegyric, into which compositions of this kind are so apt to degenerate. In point of mere literary excellence, it will stand comparison with the productions of the most finished scholar; and is in every respect worthy the virtues which its pages record. We can only afford space for the following extracts:—

"Matthew Baillie was a native of Scotland; he was born on the 27th of October, 1761, at the manse of Shots, in the county of Lanark. His father, the Rev. James Baillie, was soon after removed from Shots to the church of Bothwell, then to that of Hamilton, and subsequently was elected Professor of Divinity in the University of Glasgow. Having passed through the usual course of education at the grammar-school of Hamilton, where he acquired a reputation both for industry and talent, young Baillie became a student of the University of Glasgow. He then attended the Greek and Latin classes during the two first seasons; in the third he became a diligent mathematician, and attended the logic class, and that of moral philosophy, then taught by the celebrated Dr. Reid. The students with whom he chiefly associated at Glasgow, were distin-

guished by their good conduct and abilities; and he stored up a source of pleasure, in hearing afterwards of the success of many of them in life, and in believing that every prosperous circumstance which fell to his own lot, would be welcome intelligence to them. Dr. Baillie's mother, Miss Dorothea Hunter, was the sister of John and William Hunter, the celebrated anatomists. From the peculiar advantages held out to him by his uncle, William Hunter, he was induced, though at first contrary to his inclination, to choose medicine for his profession; at that time the pulpit or bar would have pleased him better. William Hunter, who was at this time far advanced in years, was a shrewd observer of mankind, and his long intercourse with the world, had furnished him with many recollections and observations. He had at the same time a peculiar happy talent for relating anecdote, and with such expression of countenance and voice, that it was supposed he might have acquired on the stage the highest rank as a comedian. To hear him tell stories, and indulge those humours by the fire-side, which was a common custom when alone with his nephew, was delightful to the youth, who, on the following morning, had the advantage of receiving instruction from one of the greatest philosophers of the age. In two years from the commencement of his studies, Baillie became a teacher in the anatomical theatre. But he had not been thus employed more than twelve months when William Hunter died, bequeathing to him the use of that Museum which is now deposited in the University of Glasgow, and forms so noble a monument of its founder; and it may be remarked as a most extraordinary circumstance, that two brothers, at the same time, and in the same place, should have collected the two most splendid and most extensive Museums now existing; and any person inspecting them can hardly conceive how either of two such vast collections could have been the work of a single individual. In a MS. lecture, in which Dr. Baillie alludes to the character of the Hunters, he remarks, 'no one ever possessed more enthusiasm for the art, more persevering industry, more acuteness of investigation, more perspicuity of expression, and indeed a greater share of natural eloquence, than William Hunter. He excelled very much any lecturer whom I have ever heard, in the clearness of his arrangement, the aptness of his illustrations, and the elegance of his diction. He was perhaps the best teacher of anatomy that ever lived.' Speaking of John Hunter, he observes—'The mind of John Hunter was bold and inventive, treading constantly in a path of its own, without regard to the common track which had been followed by others. This was aided by an industry and enthusiasm, of which it would be difficult to find any superior example. With such singular endowments for the cultivation of science, his progress was proportionally great. There is no object which he had considered where he has not added new light; and there are many which he has very much improved.' 'William Hunter was distinguished for his talents, but John was a man of extraordinary genius.'

"Two years after William Hunter's death, Baillie, associated with Mr. Cruickshank, gave his first course of anatomical lectures; thus un-

dertaking, in the twenty-second year of his age, the arduous task of supplying the place of one of the most distinguished teachers. But such was his success, that the number of students of that school was not diminished by the loss of its illustrious founder. . . . . As a lecturer, he soon attained considerable eminence, being remarkable for the simplicity aad perspicuity of his demonstrations, the order and method of his style, and the clearness and distinctness of his delivery. 'There was something in his mode of lecturing,' to use the language of one of his pupils, 'which, though not eloquent, irresistibly commanded the attention of his hearers: it was that of a person completely master of his subject, and anxious to convey knowledge to others. He was singularly clear in his demonstrations, yet concise and condensed; he was never at a loss for an appropriate word or phrase; never made repetitions; never introduced an observation out of its proper place; and he had nothing to assist him, except in a few introductory discourses, but the mere heads of his lectures. His manner was not without animation, yet always modest, and most unostentatious; and the attention of the student was excited, not by brilliancy of composition, but by a remarkable fluency and precision of expression.'

"Dr. Baillie possessed, in an eminent degree, a facility in distinguishing diseases: one of the most important qualities in the practice of medicine, and which can only be acquired by an intimate knowledge of the natural structure of the human body. Habits of attentive observation had also enabled him to know, with great accuracy, the precise effects and extent of the powers of medicines; indeed, there was no class of cases more likely to fall under his observation than those in which they had been abused; younger practitioners being apt to carry particular systems of treatment beyond their proper limits. Dr. Baillie's quickness, therefore, perceiving this abuse, rendered his opinion in many cases of great value.

"In the practical part of medicine, which in its application to individual cases may be said in many respects to be conjectural, the more a man advances in years, the more does he find how limited has been his knowledge; and how much he has still to learn, no one seemed more aware than Dr. Baillie; and I have frequently observed this superior knowledge of his art lead to the remark, that his practice was inert; for when he perceived certain and irremediable changes in disease, or when they had a fatal character from their commencement, he would merely attempt to palliate, whilst a practitioner not possessing his accurate knowledge, would have made fruitless efforts to cure the disease.

"In nothing did he excel more than in the clearness, the conciseness, and the unaffected simplicity in the mode of delivering his opinions. He had the particular method of leaving no ambiguity in the mind of a patient; and the language he employed was so plain, and so free from scientific jargon, that I have often heard a patient repeat, word for word, all he had said on such occasions. He possessed also, in an unusual degree, the power of simplifying, and of illustrating by analogy, what appeared complex and unintelligible, and was thus able to give

patients a correct and satisfactory idea of the nature of their complaints. He frequently expressed himself in striking and original language, but always without the slightest affectation. Strong, clear sense, was that for which he was most remarkable. He could admire and praise ingenuity, but it never for a moment imposed upon him.

"He had a most natural, unassuming, but decided and impressive manner, which, in the exercise of his professional duties, was the same to all persons, and on all occasions; his benevolent principles led him to disclaim all distinctions in his mode of addressing the sick. His slender form, together with the great modesty of his deportment, and the simplicity of his manners, often appeared very striking to strangers, who, from his distinguished character, had been led to expect something more imposing in his person and manner.

"His mind was always quietly, but eagerly directed to the investigation of the symptoms of his patient's disease, and he had so distinct and systematic a mode of putting questions, that their answers often presented a connected view of the whole ailment, which could not fail to impress them with his clear and comprehensive understanding.

"Dr. Baillie's physical frame was feeble, compared with his mental powers. He was under the middle stature, and of rather a slender form; but his unassuming exterior seemed only to make a deeper impression on those around when he entered into conversation. His countenance was marked by a great deal of sagacity and penetration, and when he was excited into earnest conversation, his features became illuminated, and had much vivacity and intelligence. His personal habits were simple, and calculated to give little trouble; and it was as easy to please him in those matters that regarded his table, as his toilet. He seemed to have a particular dislike to the affectation and peculiarities of dress displayed by some medical men, as derogatory to the respectability of their profession.

"Dr. Baillie was married, in the twenty-ninth year of his age, to Sophia, second daughter of the late celebrated Dr. Denman. The extent of talent united in his family and their connexions is remarkable. He was not only the son of an able professor, and the nephew of the Hunters, but his sister, Miss Joanna Baillie, has attained the highest rank in literature. Mrs. Baillie's sister was married to the late Sir Richard Croft, a man whose name is endeared in the recollection of many, as well for his manly and upright heart, as for his professional celebrity; and Mr. Denman, who has distinguished himself so much at the bar, was Dr. Baillie's brother-in-law."

Dr. Baillie's Work on Morbid Anatomy has been so long in the hands of the profession, its peculiar merits have been so well appreciated, and its general character so fully established, as to render criticism a work of supererogation. The science of pathological anatomy has, indeed, recently undergone extensive and important alterations in various departments, for which we are chiefly indebted to the labours of Continental physiologists;

but in estimating the merits of Dr. Baillie's work, we should regard, not so much the present improved condition of the science, as its state at the period when he wrote; and although it is to be regretted that the pressure of professional avocations prevented him from keeping pace with the contemporary progress of the science, his work will never cease to be valuable, for the extent, importance, and condensation of the knowledge it conveys, and for the clear, happy, and faithful manner in which he has delineated the characters of disease.

The general observations on diseased structure, which Mr. Wardrop has prefixed to the Morbid Anatomy, form the only part of the second volumes that claim particular remark. Such is the obscurity that overhangs the formation of the different species of diseased structure—such the endless diversity of these appearances, and the ever-varying phenomena that accompany them—that our knowledge must be confessed to consist chiefly of a confused mass of insulated facts; in which we have hitherto been able neither to trace any general law, nor to detect any natural principle of arrangement. Hence all attempts to unravel the formation, or classify the varieties, of morbid structure are more to be admired for the ingenuity they display, than for the success of the undertaking; and are, at best, but imperfect substitutes for that systematic knowledge of which we feel the want, but the clue to which has hitherto been sought in vain. Thus also, the want of uniformity among the phenomena of structural disease is such, as to preclude the possibility of successful generalization, for they can be reduced to no general law which, however carefully deduced from copious observations, shall not, in the aggregate individual cases, be nearly as often violated as observed. We nevertheless coincide with Mr. Wardrop, in regarding systematic views of structural disease, although necessarily very imperfect, as far from useless; for, as he has well remarked,

"By tracing the analogies that exist between diseases as they occur in different parts of the body, not only is the study of pathological anatomy much facilitated and abbreviated, but we are greatly assisted in acquiring an accurate knowledge of diseases, of perceiving differences in their general character, and of establishing general principles for their treatment."

Mr. Wardrop commences his observations by remarking the extensive variety and striking differences of the morbid changes which affect the different textures and organs of the body; and of their concomitant phenomena.

"Some diseases change the structure of only one organ, or one or more textures of an organ, whilst others attack various organs; or several different textures at the same time. There are some diseased

structures which influence the functions only of the organ affected, whilst others contaminate, more or less, the whole system. Some diseases go through a particular course, and leave the body unimpaired; whilst there are others which proceed without interruption, until they destroy life. In some diseases a growth is formed; in others, there is a destruction of the natural structure. In some diseases, the new growth resembles one of the natural structures, or textures of the body; in some, it is a substance *sui generis;* and in others, the diseased growth is a combination of both these classes of structures."

Mr. Wardrop next proceeds to trace some of the general characters of those morbid alterations of structure produced by diseases termed specific.

"Those diseases are termed specific which attack several organs, or several textures of an organ indiscriminately, and which are at the same time attended by a particular train of constitutional symptoms, and always pursue a particular progress. Scirrhus, fungus hæmatodes, fungus melanodes, scrofula, gout, scurvy, &c. are examples of specific diseases; and others, as small-pox, measles, scarlatina, and syphilis, have also been denominated specific, from the peculiarity of their exciting causes. . . . . In some specific diseases there is a morbid growth, whereas in others there is a destruction of parts. The diseased structures which are generated in specific diseases differ, in many respects, in their general characters from the common diseased structures. They want the uniformity of appearance which common diseased structures present, and have a variety in their consistence and colour at different stages of their progress. Some of these morbid structures are interspersed in the substance of the affected organ, whilst in others the natural structure of the diseased organ completely disappears, and is replaced by the new growth.

"Though specific diseases may be said to affect various organs and textures of the body, yet each of them seems to have a preference, or affect some particular organs or textures more than others. Scrofula most frequently attacks the lymphatic glands; scirrhus the conglomerate glands; syphilis the skin, the lymphatic glands, the amygdalæ, and the bones; and there is reason to suspect that, in some instances at least, fungus hæmatodes affects the nerves. The medullary pulp of nerves has also, in some instances, been observed to be altered in the melanoid tumour. It may likewise be remarked of specific diseases, that they vary but little in their characters in different organs; any varieties which they exhibit in their appearances, arising chiefly from differences in the constitutions of the individuals affected by them.

"There are several specific diseases that run through a particular course, and, though symptoms may be alleviated, the progress of the disease cannot be checked. Another striking peculiarity of specific diseases, is their primary and secondary stages, the accession of the secondary symptoms indicating a remarkable period in the history of these diseases, and producing an important change in their character and

treatment. When specific diseases advance to the second stage, this secondary affection consists either in the lymphatic glands, which are in the direct channel of the circulation, becoming diseased, or by distant parts becoming affected by some mode of constitutional contamination, not hitherto explained; or the disease may spread by both these modes in the same individual, and at the same time. Thus the secondary symptoms of syphilis are sometimes the appearance of bubo, and sometimes an affection of the skin, and sometimes ulceration of the tonsils. Scirrhus, in its progress, most generally affects those lymphatic glands which are in the direct course of circulation; but, in some cases, scirrhous tubercles also form in remote internal organs, as in the liver and lungs. The same observation may be made with regard to fungus hæmatodes, and fungus melanodes; the adjacent lymphatic glands being sometimes contaminated, when these diseases advance to their secondary stage; whilst, in many instances, distant organs, and organs not in the direct channel of the absorbents, become the seat of hæmatoid and melanoid tumours. The progress of both these classes of symptoms varies exceedingly in different examples of specific diseases. In some diseases the primary symptoms spread very slowly, in others rapidly. In some the secondary symptoms make their appearance soon after the primary affection has commenced. In some instances, the secondary symptoms appear very late, and in others the primary disease even proves fatal before the accession of any secondary symptoms. The line of demarcation between the primary and secondary stages of specific diseases, leads to some important practical conclusions; because it accurately points out those cases where local treatment can be expected to avail, and those where relief can only be obtained through the medium of the constitution. In syphilis, this division of symptoms has long been pointed out, and the treatment regulated accordingly; and in my Essay on Fungus Hæmatodes, I have had occasion to dwell at some length on the impropriety of attempting to remove either hæmatoid or scirrhous tumours, when any secondary affection can be detected.

"It may be remarked of specific diseases, except those which are conveyed into the system by inoculation, that they generally attack an organ which has previously been diseased. A scrofulous gland will generally be found to have been first affected with common inflammation. Or, if a person having a scrofulous diathesis receives an injury, the injured part, though at first affected with common inflammation, may ultimately participate in the peculiarity of the constitution of the individual. And thus the effects of local injury can often be traced with respect to schirrus, the mammæ, the testes, and the skin being, in many instances, injured or otherwise diseased, previous to tumours in these organs assuming the scirrhous character. How often do tumours of the mammæ, that have for a series of years remained stationary or indolent, become suddenly malignant, after having been accidentally injured, or when the uterine system, with which the mammæ so greatly sympathizes, is deranged? The same observation may frequently be made in cancerous affections of the skin; for these very frequently commence by a

common wart, which, having remained quiet for many years, is at last accidentally scratched or injured, after which it assumes all the malignant character of cancer. It is also the same with respect to fungus hæmatodes; for in a great number of cases which have come within my observation, the affected part had received some injury previous to the appearance of the malignant tumour.

Specific diseases frequently affecting an organ, or a particular texture of an organ which had been previously diseased, affords an incontrovertible argument in favour of the opinion, that such diseases are, at one period, purely local. In the history of syphilis this fact is distinctly proved, and I think it must also be admitted that cancer may exist without any contamination. Reasoning, therefore, from analogy, may it not be inferred that both fungus hæmatodes and fungus melanodes are, at one period, strictly speaking, local complaints ?"

If Mr. Wardrop employs the term local to express merely the *extent* of the diseases in question; if in designating them local, he means to affirm, that at one period of their course, the morbid structure is developed in one part or one organ only, the truth of his position is incontrovertible; but if he employs the term local in reference to their *proximate cause*, and as indicating their origin purely from local irritation, and independently of constitutional tendency, it is equally clear that his premises do not warrant such a conclusion. The analogy which Mr. Wardrop seems willing to establish between syphilis and the malignant structural diseases, although ingenious, we confess, appears to us somewhat strained.

In the latter class of diseases, he seems disposed to adopt the idea of a specific virus not pervading the system, like that of the humoralists, and fixing on some particular organ, but a local poison, generated in, and by the peculiar action, of the diseased organ, and thence extending itself, either to the adjacent lymphatic glands by direct absorption, or contaminating, in some unexplained manner, the remote parts of the body. We shall not here enter on the disputed opinion of a specific virus; an opinion, which so far as regards scrofula and scirrhus, is discountenanced by numerous experiments, but will merely observe, that there is no analogy between the origin of syphilis in its primary stage, and the origin of the specific structural diseases, inasmuch as the circumstance which renders syphilis in its primary state purely local, viz., the local application of a morbid poison, does not hold in the other class of affections. If some theory must be adopted on a subject as yet destitute of satisfactory data, would it not be more natural to refer the propagation of the preceding structural diseases, whether to the adjoining lymphatic glands or to more distant parts, to the acknowledged laws of *sympathy* that regulate the locomotion of

simple inflammation? The analagous operation of this principle is obvious, in the latter case, in the affection of lymphatic glands which frequently appears in the neighbourhood of parts affected with simple inflammation; and, more remotely, in those numerous instances where external inflammation excites inflammation in an internal organ, or the inflammation in one internal organ produces it in another, as when the brain inflamed from injury, produces suppuration in the liver. Although ignorant of the mode in which the principle of sympathy thus leads to a multiplication of inflammation, yet, as the fact is indubitable with regard to *simple* inflammation, it proves the existence of a law in the morbid economy, to which we naturally refer for an explanation of the propagation of those forms of inflammation termed *specific*. If Mr. Wardrop admit, that by the principle of sympathy the increased action of any part primarily affected with scirrhus, &c. may be extended to other parts or organs, contiguous or remote, he must also allow, that the same constitutional tendency, which in the formation of the primary disease, caused a specific to supervene a common inflammation, should be similarly effective in giving the specific character to the inflammation of the part secondarily and sympathetically affected. If, as Mr. Wardrop's own argument in support of their local origin implies, the *primary* formation of these diseased structures may take place without the operation of any specific poison, where is the necessity for calling in the aid of this ideal agent to explain the formation of their *secondary* stage?

The most valuable part of Mr. Wardrop's preliminary sketch of structural disease, is his succinct and excellent summary of the characters and history of the four principal varieties of specifically diseased structure; the scrofulous, scirrhous, hæmatoid, and melanoid structures; and which is peculiarly calculated to supply the want of systematic views which many have considered a deficiency in Dr. Baillie's work.

The additional articles supplied by Mr. Wardrop in the body of the work, render it still more valuable as a book of reference, and probably as complete as it could have been made without being entirely remodelled; a plan which, however desirable in such hands, was evidently beyond the pale of Mr. Wardrop's duties as an editor.

ART. X. *Elements of the Etiology and Philosophy of Epidemics.* In Two Parts. By J. M. SMITH, M.D. New York. 8vo. pp. 223. 1822.

As we have not yet been able to procure a copy of this work, upon a subject which has lately excited so much interest, we shall take the liberty of giving an account of it from the *New York Medical and Physical Journal,* so ably conducted by Dr. J. Beck.

"Dr. Smith has taken up the subject at the point where his predecessors may have been supposed to have left it, had they perfected the views which they conceived, or accomplished the task with which they set out: and had he indeed been able to perform this, the attempt of Dr. Smith would have been timeous, and attended with some prospect of success. Had the causes of epidemic fevers been thoroughly investigated, and their different natures and properties been fully understood, a philosophical arrangement of these causes would not only have been necessary and proper, but it would have been imperiously demanded. This happy period not having yet arrived, (for much as we claim for former writers, we cannot assume that they even pretended to have brought this about,) it becomes a serious question whether the attempt of Dr. Smith is not premature, and far from likely to produce any satisfactory result. Not only are the general laws governing epidemics not as yet well ascertained, but their origin, and the secret combinations which favour their development in one season and not in another, and likewise those which modify their peculiar character at different periods, are all hidden; nor are they, probably, within our reach. With what little hope of success, then, any project to arrange such undefined and inappreciable essences or beings in a philosophical or fixed order must be accompanied, is sufficiently evident. By urging this objection, we would not, however, be considered as detracting an iota from the merits of our author, who has displayed ingenuity and talent of no common order.

"In the introduction, Dr. Smith discusses several general points of great interest, relating to the causes of epidemics. Contagion of course has a prominent place. Our author observes how truly singular it is, that for a thousand years the small-pox, measles, and scarlatina, committed their ravages without physicians having detected the contagious attribute undoubtedly belonging to them, while on fever they did not hesitate to bestow this doubtful property; and that the same inductive mode of reasoning which developed the true nature and communicability of the exanthematous fevers, led at first to doubts, and finally to a total denial of the contagiousness of fevers. This fact is no less curious than it appears to us most singularly decisive of the merits of the dispute relating to contagion. We hear and see much of reference to the

authority of the ancients; but assuredly they should be viewed with jealousy and suspicion, when their limited opportunities, compared with our own, and their defective and unphilosophical methods of arguing, are taken into consideration. After all, why shall we refer to any authorities excepting those of our own observation and experience, especially on a subject like this, in which the exercise of these is so absolutely necessary, if we would faithfully watch the various and frequent modifications which the influence of time and localities produce in the aspect and history of disease?

"In the course of these remarks, arises the interesting query, whether bodies, labouring under pestilential disease, may always be approached with impunity? There can be no doubt in the mind of any one acquainted with the phenomena of epidemic diseases, that there is at times danger of contracting disease from the atmosphere surrounding sick bodies. On this admission the contagionists pride themselves not a little: and they insist, that if there is danger, from whatever source, in a room occupied by the sick, they have gained their point to all effectual intents and purposes. We would beg these disputants not to be so fast. From what does the danger arise? Is it from a peculiar secretion essential to the existence of the disease, and of consequence its invariable attendant? Dr. Adams has shewn that the poison generated in these cases is not contagion, because it does not necessarily (as has been, with singular pertinacity and error, maintained by some,) reproduce the same disease as that with which the sick are affected, which should be the case if that disease were contagious. The product is a typhus fever; it is only developed in places in which cleanliness and ventilation are totally neglected; and it may equally arise where the sick are confined with yellow, bilious, or any other fever, or in fact any other disease. A difficulty, however, would seem to attend cases in which the confined sick are themselves affected with typhus; in which instance the disease reproduced being the same as that prevailing among the sick, it may be cited as an indisputable evidence of contagion. On a little reflection, however, the difficulty vanishes. The disease reproduced is indeed the same; but it is not thus reproduced excepting under peculiar circumstances of filth, &c.; which circumstances being removed, the reproduction of the disease ceases. Now, if this reproduction depended upon a contagious attribute in typhus, it should be, not an occasional occurrence only, but one under all circumstances in which bodies approached sufficiently near to be within contact of the poison. It will be still objected, however, by the moderate contagionists, that these diseases are not contagious under all circumstances; that they only become so in a foul and vitiated atmosphere. This is, however, to admit that contagion is not an essential attribute of these fevers; and if this is given up, then it is really absurd to consider it such when there is superadded to its supposed influence the direct operation of causes which are shown to be sufficient of themselves to produce the effect, without the aid of the gratuitous combination. It has been still further urged as an objection to the view we have here

taken, that it involves a neglect of those means of checking the prevalence of pestilential fevers which have been employed with so much success in Great Britain and elsewhere. It requires, however, but a slight insight into all the circumstances of the case, to convince every one, that the necessity and propriety of these measures are far more imperiously deducible from these views than from the childish, superstitious, and vague fears of contagion. In fact, we could never understand how their favourable operation can be satisfactorily explained by contagionists, excepting on the absurd postulatum that an essential attribute of a disease can be rendered inefficient: a position not less contrary to reason than to fact.

We now come to Dr. Smith's arrangement of the remote causes of epidemic diseases, and we shall follow it in regular order.

"The first order is *contagion.* This is defined to be 'a poison, generated by morbid animal secretion, possessing the power of inducing a like morbid action in healthy bodies, whereby it is reproduced, and indefinitely multiplied.' We are truly surprised to find that our author, in a work professing to be philosophical, should have admitted so unphilosophical, loose, and indefensible a classification of contagious diseases as those proposed by Professor Hosack. Our objections to this arrangement have been already so fully stated, in our review of that gentleman's essays, that we deem it unnecessary to enter upon any repetition of them in this place. We have only to express our regret, that Dr. Smith, if he had any permanent reputation in view for his book, should have assented to an arrangement so objectionable, and so little likely to stand the test of time. It is but justice to Dr. Smith to state, that he has not adopted Dr. Hosack's classification in toto. Influenza and cynanche maligna are deservedly erased from the contagious catalogue, where it is matter of serious astonishment that they should ever have been placed. The third class of Dr. Hosack, including fevers misnamed contagious, is of course rejected altogether.

"Order II. *Infection.* Dr. Smith defines it to be 'a febrific agent produced by the decomposition of animal and vegetable substances.' It exists in the state of a gas, or miasm, occurring in marshes and filthy houses, hospitals, jails, &c. &c. It has been severally known by the names of *marsh, or paludial miasmata, exhalations of the soil, vegeto-animal effluvia, malaria, human effluvia, febrile and putrid contagion, &c.* To some one of the genera included under this order, every fever of whatever description may be traced.

"'Those who contend that contagion is the first essential of plague and yellow fever, argue, that if these diseases were produced by the exhalations from dead animal and vegetable matters, they would more frequently occur where there are offensive collections of putrefying substances. But this reasoning is by no means satisfactory. It should be recollected, that the qualities of the effluvia exhaled from putrescent substances may be diversified by a variety of circumstances; and particularly by the kind of materials undergoing corruption, their propor-

tions, state of mixture, and degrees of temperature and moisture. The secret influences of the atmosphere, too, especially those which favour the prevalence of pestilential epidemics, may be supposed to have an agency in varying the properties of miasmata.'—pp. 43, 44.

"Under the order infection, Dr. Smith includes three genera: the two first of which are borrowed from Dr. Miller's arrangement, and the third, which is original with our author, is a compound of the two former.

"Genus I. *Koino Miasma.* This includes the effluvia arising from masses of public filth, and from marshes, &c. A high temperature, and a certain degree of moisture, are necessary to the development of this miasm. In this genus are arranged the miasms which produce plague, yellow fever, remittent and intermittent fevers.

"Genus II. *Idio Miasma.* It is produced by animal excretions, accumulated in small and unventilated places, acted upon by heat. Accordingly, it occurs generally in the houses of the poor. It is the source of typhus fever, also known under the name of hospital, or jail fever. Dr. Smith thinks that this form of disease cannot be said to occur epidemically, because the miasm becomes innoxious when diffused in the atmosphere a few feet beyond the apartments in which it is engendered. We cannot altogether subscribe to this opinion. Typhus has prevailed in England too extensively not to be entitled to the name it has there received, by way of distinction of epidemic fever. Nor has it been confined there in its ravages to the poor. The rich suffered equally from the disease, and in many places it proved even most fatal among this class. We admit, however, that it is rare; in this country we believe there is scarcely an example on record, in which the general atmosphere of a city became pestiferous from this cause.

"Genus III. *Idio Koino Miasma;* or a combination of the two former genera, producing compound fevers. We have some doubts as to the propriety of constituting the union of the two miasms already described, a separate genus; in other words, of forming a tertium quid. It is surely very possible that both these may be entirely distinct in their sources, and yet those sources be so near each other as to produce a simultaneous operation, or one nearly so upon the same individual. This would indeed induce a mixed effect; but it does not necessarily imply that the causes are themselves essentially mixed. Our author himself admits that it is impossible to decide whether the different miasms in this combination are merely in a state of mixture, or chemically united. We would add, that it is equally impossible to decide whether the causes, as such, are mixed at all. We hope, that in offering this objection to our author, we shall not be deemed hypercritical. His arrangement purposes to be a philosophical one, and founded upon strictly inductive principles. Too much jealousy and caution cannot, therefore, be exercised before we admit any principle, or establish any distinction that is not founded upon the most rigid exactness.

"That the effects of the two causes are occasionally combined, there cannot be a doubt. The following is our author's view of it:—

"'Let us suppose the circumstances in which typhus originates to occur in Summer, such as the crowding of individuals into small apartments, badly ventilated, and rendered offensive by personal and domestic filth. These causes would obviously produce typhus in its ordinary form. But suppose there exist at the same time those exhalations which occasion plague and yellow fever, or intermittent and remittent fevers. Under such circumstances, we should not expect to see any one of those diseases fully and distinctly formed, but a disease of a novel or modified character.

"'In this country, several memorable instances have occurred within a few years, which will enable us to exemplify the peculiar agency of *idio koino miasma*.'—p. 54.

"The first instance adduced is that of the Bancker-street fever of 1820, about which so much difference of opinion and acrimony of feeling prevailed. We agree with Dr. Smith that, upon a careful review of all the facts connected with the subject, we are warranted in deciding that this disease was neither genuine typhus nor bilious fever, but a compound of both. In this opinion all the most intelligent physicians, who are acquainted with the facts, have long since concurred.

"The next instances are those of the fevers which appeared in the Philadelphia almshouse, in the Summers of 1820 and 1821, and which were described by Drs. Klapp and Emerson.

"Other instances are mentioned, taken from Pringle. Among these are the Morbus Hungaricus, and plague of Athens.

"In some remarks which follow, Dr. Smith takes occasion to mention dysentery, the remote causes of which he very properly refers to the order Infection. In relation to the contagious attribute of dysentery, we observe the following satisfactory paragraph:—

"'Dysentery, like other febrile diseases, has long been considered as capable of propagating itself by means of a specific contagion. This error obviously originated from the common observation, that, during the period when soldiers in camp, or the population of a district, are predisposed to dysentery, those persons who surround patients ill of this form of fever, whose excretions are allowed to accumulate in unventilated apartments, frequently sicken with the same disease; but there is surely nothing in this which proves its specific contagiousness. In the majority of cases where the attendant sickens, it is from the same causes which induced the disease of the patient, though in some instances from the noxious vapours generated in his apartment; but in neither case is it certain that they will sicken with dysentery. The form of disease will depend upon the predisposition of the system, and accordingly, as this tends to fever or dysentery, will the disease be characterized. Besides, it is undoubtedly true, that when there is an epidemic predisposition to dysentery, the attendants on a *typhus* patient, about whom cleanliness is not strictly observed, will more frequently sicken with

that disorder than the one under which the patient labours. This would be impossible, if the supposed dysenteric contagion were specifically different from the miasm arising from the excreta of those affected with typhus. In both cases the poison is *idio miasma*, and may induce either form of disease.'—pp. 65 66."

Species of Infection. Each of the three genera already described is subdivided into two species, the mild and the malignant; to the first of which the Greek ordinal number πρωτος is prefixed, and to the second the intensive particle *per*. Thus the genus Koino Miasma may be either a proto-koino m. or mild species, or perkoino m. or malignant species; and so with the others. The *proto koino miasma*, then, includes intermittent and remittent fevers, and the *perkoino miasma* the yellow fever and the plague. To this we must object in most decided terms. 1st, Because we believe that the fevers in these two different species do not merely differ in *degree* of violence, but are *essentially* distinct. And 2dly, Because there is abundant proof to show that it is not a greater intensity of the same causes which alone constitutes the difference between them. We insist the more on this objection, because Dr. Smith himself is equally opposed with ourselves to the view that identifies yellow and bilious remittent fevers. Now, a mere difference of grade would not constitute any essential distinction as to the identity of these two diseases; and besides, bilious remittent frequently assumes a type no less severe than yellow fever, from which it may still be, nevertheless, clearly distinguished. What still further confirms us in the propriety of submitting this objection, is the analogy we derive from the nature of the difference between the two similar species of the next genus—the protidio and the peridio miasma. The first differs from the latter in the single circumstance of being less severe, the fever produced by the former being typhus mitior, and that by the latter typhus gravior.

"Order III. *Meteoration.* This includes all atmospheric sources of disease; such as vicissitudes of weather, and also those hidden influences of the air which seem to give energy to the ordinary causes of disease, and render their operation more pervading and certain. This order is divided into two genera. 1st, Sensible; and, 2d, Insensible, or epidemic meteoration. The first applies to all those atmospheric causes of disease which are manifest to our senses. The second comprehends all those which are not appreciable by our present instruments and powers of perception, and is synonimous with the το θειον of Hippocrates, the *seminarium e cælo demissum* of Diemerbroeck, the *general* or *primary contagion* of Webster, and *the epidemic or pestilential constitutions* of Sydenham.

"Influenza, the pneumonia typhodes, which prevailed in this country in the years 1812, 13, the cholera morbus of India, and the Sudor Anglicus of 1483—5, are all referred to this head.

"The Second Part of this interesting book is devoted to an inquiry into the philosophy of epidemics. After successfully combating the arrangement of epidemics into vernal and autumnal, proposed by Syden-

ham, into local and general by Webster, and also that by Adams, which altogether excludes contagious diseases; our author lays down the following division, founded upon the three orders of causes formerly described:—

"1. Contagious Epidemics. These are small-pox, measles, chicken-pox, scarlet fever, and hooping-cough. These diseases attack once only during life, and hence they prevail less generally than other epidemics. They occur in every season, and are sometimes very extensive in their ravages.

"2. Infectious Epidemics, or those diseases which arise from the second order of infection; and,

"3. Meteorations Epidemics, or those from insensible or epidemic meteoration.

"After thus arranging epidemics, our author takes up the highly important consideration of the manner in which they modify and supersede each other. The following general aphorism is laid down:—

"'Whenever any of the diseases belonging to the several classes of epidemics prevail together in the same place, they become involved in each other in the order we have arranged them: e. g. if a *contagious* disorder prevail during an *infectious* epidemic, the latter will modify the character of the former; and in like manner, if a *meteoratious* epidemic occur with either or both of the preceding diseases, it will assimilate them more or less to its own nature.'—pp. 139, 140.

"This, it will be seen, is a precise and satisfactory elucidation of the general law which has been so generally but vaguely insisted on, that 'a prevailing disease swallows up all others, or compels them to wear its livery.' It is no less happy than ingenious, and lends to this part of Dr. Smith's volume, peculiar interest and value. The following application of the law just laid down deserves to be read with attention:—

"'The diseases which belong to the first class are specific and contagious, and being incapable of poisoning the atmosphere generally, or of affecting persons a second time, cannot impart to the air the power of modifying other prevailing complaints. The diseases of the second class depend upon the diffusion of a miasmal poison through a considerable tract of the atmosphere; and consequently, all the disorders of the first class, which occur within the circle of its range, are compelled to wear the livery of an infectious fever. The diseases of the third class arise from causes which have a sovereign influence on the human constitution; and, of course, when they prevail epidemically, all other disorders assume their character.

"'If a more explicit illustration of this law be required, let it be supposed that small-pox and measles are prevalent in a city or country town in which an infectious fever, for example bilious remittent fever, is at the same time epidemic. The miasm, which produces the latter, will affect all who are exposed to its influence—every disease will more or less assume the character of the reigning epidemic; and although small-pox and measles are essentially peculiar in their nature,

they will nevertheless exhibit the modifying impressions of the prevailing infection. Both diseases will exhibit some of the symptoms of a bilious remittent fever, and their treatment will demand a correspondent modification. And again, suppose that a *meteoratious* epidemic, for instance influenza, appears during the prevalence of the disease above mentioned. In this case, the small-pox and measles will be modified in a two-fold manner; first, by the infectious poison; and secondly, by the epidemic meteoration which produces the influenza; or, in other words, those disorders will discover the operation of three distinct remote causes, contagion, infection, and meteoration. In like manner, the bilious fever will betray the influence of the two latter. The predominating disease will obviously be the influenza.'—pp. 140, 141.

"Examples are then adduced in proof of the general operation of the law, which we regret that our limits compel us to omit.

"In the third section, our author treats of the origin of the pyrexious contagions. These he traces at each successive reproduction to a meteoratious cause, which continues to influence their character, and also that of other incidental diseases. The subject is a mysterious one, and we cannot flatter Dr. Smith that he has thrown much light on it.

"In one of the notes to this section, are some very pertinent conclusions in relation to the varioloid disease, and to the undiminished confidence we should continue to maintain in the prophylactic powers of the cow-pox.

"SECTION IV.—*Of the varieties of Epidemic Meteoration, and of their laws and modus operandi.* Dr. Smith does not think that epidemic meteoration is of itself sufficient to the production of keino miasmatic diseases. It does, however, favour the development and operation of their causes. When it thus combines with these latter, their joint influence is necessarily exerted with proportionably increased intensity. External nature presents, in general, phenomena by which their presence is denoted, and may even be foreseen. The author is inclined to the opinion, that electricity is a constituent of this meteoratious cause. This is, of course, mere speculation, and has been often indulged in before, without having as yet led to any very satisfactory conclusion, or practical benefit.

"Some have pretended to deny the existence of any secret epidemic influence. That such influence does, however, exist, is sufficiently proved by the presence of effects, which can be attributed to no other causes. Among many instances in proof, we shall be content with citing a fact mentioned by our author in this section, relating to the singular power possessed by every epidemic, of assimilatiug all cases of disease to uniformity of character. Epidemic diseases vary in their diathesis in different seasons, being highly sthenic in some, and in others asthenic. They also vary in affecting different organs, and this can only be explained by calling in the interposition of a secret atmospherical agent, or of meteoration. Dr. Smith justly observes, that this determinate uniformity possessed by a particular epidemic is a beneficent provision of nature, as it enables physicians, after a short experience, to ascertain the nature of the peculiar treatment which may be necessary in any given epidemic."

QUARTERLY HISTORY

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I. ANATOMY.

Bayle's *Manual by* Dr. Bennet *.—The original author of this excellent little work, is well known as an active *colaborateur* of the Revue Medicale, and Dr. Bennet has conferred on the medical students a great favour by translating it. Among the many similar works of this kind, which of late years have greatly multiplied, we know none which will rank with this in conciseness and accuracy. As we shall give our readers an ample specimen of the execution of the work, they will be enabled to judge of its merits, but we cannot pass over two things which may injure their opinion of Dr. Bennet at the very opening of the volume. One is the vulgar puppet-show motto on the title page, of "*Multum in parvo;*" the other, the Irish bull-looking phrase in the first page—"Great portability." Dr. Bennet might as well talk of a great mite, or a great Lilliputian. These, however, are but trifles which can be corrected in a new edition, which we doubt not will soon be called for. Our specimen shall be taken from a subject hitherto much neglected in elementary books.

THE NERVOUS SYSTEM OF GANGLIA.

§ 1st, GANGLIA OF THE HEAD.—LENTICULAR GANGLION.

"*Situation*—Applied against the external side of the optic nerve, near its entry into the orbit. *Form.*—That of a square elongated from

* A Manual of Anatomy, arranged so as to afford a concise and accurate Description of the different parts of the Human Body. From the French of A. L. J. Bayle; revised and improved by William Bennet, M. D. 18mo. pp. 376. Edinburgh, Adam Black, 1825.

before backwards; very small. *Relations.*—On the outer side, with the external rectus muscle; on the inner side, with the optic nerve. *Ramifications.*—Its postero-superior angle receives a filament from the nasal branch of the ophthalmic; the postero-inferior, one from the third pair of nerves; its anterior angles furnish the ciliary nerves.

"*Ciliary nerves.*—Very delicate, soft and divided into two fasciculi; the superior fasciculus formed of six nerves, which reach the globe of the eye, above the optic nerve; the inferior fasciculus, composed of six, eight, or ten nerves, which also arrive at the eye, and are situated on the outer and inferior side of the optic nerve. Having reached the posterior part of the orbit, the ciliary nerves, from twelve to sixteen in number, traverse the sclerotica, and proceed in a parallel direction between this latter membrane and the choroid; and, reaching the ciliary ligament, each nerve divides into two twigs. Some of these latter twigs reach the ciliary process.

GANGLION OF MECKEL.

"*Situation.*—In the pterygo-maxillary fissure, on the outer side of the spheno-palatine foramen. *Form.*—Triangular, small, and of a rosy colour, convex on the outer side, flattened on the inner. *Ramifications.*—This ganglion furnishes on the inner side the *spheno-palatine* nerves; inferiorly, the *palatine;* superiorly, the filaments of communications with the superior maxillary; and posteriorly, the *vidian* nerve.

"1st, *Spheno-palatine nerves.*—Three to five in number; they penetrate the nasal fossa, by the spheno-palatine foramen. Two or three filaments ramify on the concave surface of the superior turbinated bone, and in the corresponding meatus; others reach the middle turbinated bone, and others are distributed to the posterior part of the septum; the most considerable twig, termed the *naso-palatine*, is directed to the superior part of the septum narium, descends obliquely forwards along the septum, between the two folds of the pituitary membrane, as far as the posterior orifices of the anterior palatine canal, into which it passes and terminates in the naso-palatine ganglion.

"2d, *Palatine nerves.*—1st, The larger palatine gives a filament which is distributed to the middle and inferior turbinated bones; it afterwards enters the posterior palatine canal; furnishes, before its exit from the canal, another twig to the nasal fossæ, which is lost on the mounting process of the superior maxillary bone, and a filament which is distributed to the velum palati. The nerve then leaves the canal, is directed forwards under the palatine arch, and divides into twigs which are lost in the alveolar processes and gums.

"3d, *The Middle palatine*, descends along the posterior part of the pterygo-maxillary fissure, and divides into two filaments, one of which ramifies on the amygdalæ and velum palati, and the other, on the velum only.

"4th, *The Lesser palatine.*—Situated between the external pterygoid muscle and maxillary bone, afterwards between this latter and the palatine bone; is divided into two twigs, one for the uvula, the other for the amygdalæ and mucous follicles.

"*Vidian nerve.*—Directed horizontally backwards, passes through the pterygoid canal, giving filaments to the neighbouring parts, and divides into two branches; 1st, *Inferior or carotid branch.*—Descends into the carotid canal, applied against the walls of the artery, and anastomosing with the filaments of the superior cervical ganglion; 2d, *Superior branch.*—Enters the cranium between the petrous portion of the temporal bone and the sphenoid, and is directed backwards and outwards on the superior surface of the former bone, where it is lodged in a small groove, covered by the inferior maxillary nerve and dura mater, to which latter it adheres; it glides then with a small artery into the hiatus Fallopii, and arriving at the aqueduct of Fallopius, is applied against the trunk of the facial nerve; penetrates into the cavity of the tympanum, traverses it from behind forwards, placed at first under the incus, afterwards between its long portion and the superior part of the handle of the malleus. Above the tensor tympani it enlarges, descends forwards, and comes out by the glenoid fissure; it is then directed downwards, inwards and forwards, and is applied to the lingual nerve of the inferior maxillary. It is termed the corda tympani from its entry into the cranium to its union with this latter nerve; it then leaves the lingual nerve, on a level with the sub-maxillary gland, to gain the ganglion of the same name.

"The other ganglia of the head are the *Cavernous*, *Naso-palatine*, and *Sub-maxillary.*—The former situated in the sinus of the same name; the naso-palatine, in the anterior palatine foramen; and the latter, seeming to be formed by the superior branch of the vidian nerve, situated on a level with the sub-maxillary gland.

GANGLIA OF THE NECK.—SUPERIOR CERVICAL GANGLION.

"*Situation.*—Beneath the base of the brain, in a depression observed above and behind the angle of the inferior maxilla; extending from the inferior orifice of the carotid canal, as far as the third cervical vertebra. *Form.*—Elongated, somewhat oval, soft, and of a greyish-red colour. *Relations.*—Posteriorly, with the rectus anticus capitis; anteriorly, with the internal carotid; on the inner side, with the par vagum and ninth pair. *Ramifications.*—It gives off superior filaments, which are two in number; these mount into the carotid canal, and anastomose with the superior twig of the vidian nerve, with the sixth pair in the cavernous sinus, with a filament from the glosso-pharyngeal, and by other twigs, with the ophthalmic and nasal branches; inferior descending filaments, which pass in front of the anterior recti muscles, and longus colli, covered by the carotid artery, internal jugular vein, eighth and ninth pair, and terminating on a level with the fifth or sixth vertebra, in the middle cervical ganglion. It gives some twigs to anastomose with the external laryngeal nerve, and two or three others which enter the chest and concur in forming the cardiac plexus. The external, internal, and anterior filaments, anastomose; the first, with twigs from the cervical nerves; the second, with the glosso-pharyngeal and eighth pair, forming the pharyngeal plexus: and the third, with the eighth pair and

facial, forming a plexus for the primitive carotid; in fine, the latter twigs of the superior cervical ganglion unite to form the superior cardiac nerve.

MIDDLE CERVICAL GANGLION.

"Situated on a level with the fifth or sixth cervical vertebra, near the curve of the inferior thyroid artery; of a lenticular form in relation anteriorly, with the carotid artery, internal jugular vein, and eighth pair; posteriorly, with the longus colli. Its anterior filaments form the middle cardiac nerves.

INFERIOR CERVICAL GANGLION.

"Of an irregular figure, semi-lunar, situated behind the vertebral artery, between the transverse process of the seventh vertebra and neck of the first rib; furnishing numerous twigs which anastomose with the cervical branches, the first thoracic ganglion; and the most inferior form the inferior cardiac nerves.

CARDIAC NERVES.

"Three on either side, terminating in the cardiac plexus. The *superior cardiac nerves.*—Those of the right side are formed by five or six filaments which come from the superior cervical ganglion, descend along the neck, on the side of the trachea and thyroid gland, penetrate the chest behind the subclavian vein, and receive twigs from the inferior cervical ganglion and recurrent of the eighth. Those of the left side descend between the primitive carotid and subclavian arteries, and pass on the aorta to unite to those of the inferior cardiac nerve.

"*The Middle cardiac.*—That of the right side is more voluminous than the two others of the same side; it arises from the middle cervical ganglion by five or six filaments, descends inwards near the primitive carotid, anastomosing with the recurrent, and terminating in the cardiac plexus. That of the left side receives its principal twig from the inferior cervical ganglion, descends behind the subclavian artery, and passes behind the arch of the aorta. The *inferior cardiac.*—The filaments which form that of the right side come from the inferior cervical ganglion, proceed on the anterior side of the arch of the aorta as far as the cardiac plexus. The middle and inferior cardiac nerves, on the left side, are united into a single trunk.

CARDIAC PLEXUS.

"*Situation.*—Behind the arch of the aorta, near the origin of this artery. *Form.*—Elongated, tortuous. *Ramifications.*—It receives the cardiac nerves, and furnishes anteriorly, posteriorly, and inferiorly, a great number of filaments; some ramifying on the aorta; others terminating in the pulmonary plexus; others embracing the ductus arteriosus, and left pulmonary artery; a more considerable filament gains the posterior part of the heart, interlacing its twigs around the posterior coronary artery, and forming the coronary plexus; other filaments are directed towards the anterior part of the base of the heart, and form

the anterior coronary plexus, and accompany the artery of the same name.

THORACIC GANGLION.

" *Number.*—Twelve on either side. *Situation.*—In front of the head of each rib, in the intercostal spaces, underneath the pleura. *Form.*—Oblong. *Ramifications.*—Communicating together by filaments, and giving off external and internal twigs. The filaments of communication are voluminous, frequently equal to the size of the ganglia themselves; extending from the inferior part of one ganglia to the superior part of the other; are never multiplied or ramifying between the neighbouring ganglia; the intercostal arteries generally pass between them. The external twigs anastomose with each of the anterior branches of the dorsal nerves at the moment of their exit from the holes of conjugation: the internal concur to the formation of the splanchnic nerves.

SPLANCHNIC NERVES.

" Two on either side, distinguished into the great and small.

NERVUS SPLANCHNICUS MAJOR.

" It arises from the internal part of the sixth, seventh, eighth, ninth, and sometimes the tenth thoracic ganglia, by four or five roots, which descend inwards on the sides of the vertebral column, and unite into a single trunk on a level with the eleventh dorsal vertebra; this nervous cord enters the abdomen, across a separation of the fleshy fibres of the diaphragm, applied on the vertebral column, passes behind the stomach, a little above the surrenal capsule, and terminates in the semi-lunar ganglion.

NERVUS SPLANCHNICUS MINOR.

" Formed by two branches which come from the tenth and eleventh thoracic ganglia; which unite again on the twelfth dorsal vertebra into a small cord, which enters the abdomen, anastomoses with the former, and terminates in the renal ganglion.

GANGLIA OF THE ABDOMEN.—SEMILUNAR GANGLION AND SOLAR PLEXUS.

" *Number.*—One on either side. *Situation.*—Partly on the pillar of the diaphragm, and partly on the aorta; on a level with the cœliac artery, above and a little behind the surrenal capsule. *Form.*—More voluminous than all the other ganglia, oblong, concave superiorly, convex inferiorly. *Ramifications.*—By the superior and external extremity, it receives the great splanchnic nerves; by the inferior, it communicates with that of the opposite side. The two semi-lunar ganglia are surrounded by a number of others, varying in number and volume, communicating freely with one another by short filaments, from which the solar plexus is formed. This latter lies on the vertebral column, the aorta, and pillars of the diaphragm, and is concealed by the stomach anteriorly, the liver and diaphragm superiorly, and the pancreas inferiorly; it receives some twigs from the eighth pair of nerves, and fur-

nishes numerous twigs which accompany all the divisions of the aorta, in forming secondary plexuses, such as the *Diaphragmatic, Cœliac, Coronary stomachic, Hepatic, Splenic, Superior Mesenteric, Inferior Mesenteric, Renal, and Spermatic,* which accompany the several corresponding arteries.

LUMBAR GANGLIA.

"*Number.*—Five on either side: sometimes two or three. *Situation.*—On the anterior and lateral parts of the lumbar vertebræ, near the great psoas muscle. *Form.*—Oblong. *Ramifications.*—They give off branches of communication, and internal and external filaments. These branches, together with the corresponding ones coming from the *Sacral ganglia,* concur in the formation of the

HYPOGASTRIC PLEXUS.

"This is composed of numerous filaments from the *vesical uterine, vaginal,* and hæmorrhoidal nerves, and of a great number of the anterior twigs of the sacral ganglia."

M. Bogros *on the Tubular Structure of the Nerves.*—We mentioned in our last, that M. Bogros had succeeded in satisfying himself, by experiment, that the nerves can be injected, and are therefore tubular. This will soon be determined, for the Academy of Sciences has appointed a committee to examine, repeat, and report upon the experiments of M. Bogros, which we gave in our preceding Number. When we mention the names of Cuvier, Dumeril, Geoffroi St. Hilaire, and Dupuytren, as the members of the committee, our readers will be satisfied that the experiments will be properly appreciated. We should conjecture *à priori,* that M. Bogros has mistaken the tubes of the *vasa nervorum* for the tubuli of nerves.

Tiedemann's *Description of the Arteries.*—This is a splendid work. The arteries are exhibited in their natural size, and coloured in seventy-six plates, on imperial vellum paper, accompanied with descriptive letter-press, in German and Latin. The author stands so high as an anatomist, that we need scarcely say the figures are no less accurate than the descriptions.

South's *Description of the Bones.*—It is now common, and extremely proper, for the London lecturers to publish Manuals for the use of their pupils. Of these Manuals, we have in anatomy, Stanley's, Shaw's, Green's, Mayo's, &c. and the little work before us, by Mr. South, lecturer at St. Thomas's Hospital, is another confined to the bones, which usually form the first subject of a student's anatomical studies. We have not examined every particular description in the book, but such as we have scrutinized, we find to be accurate, and we recommend the work as an excellent pocket companion for all students of osteology.

TIEDEMANN'S *Anatomy of the Fœtal Brain, by* DR. BENNETT.* We have already, in the preceding page, had occasion to praise Dr. Bennett for his translation of Bayle, and in the present case he has laid the profession under farther obligation, by his excellent translation of the laboured work of Tiedemann on the Fœtal Brain, of the original of which we have given a minutely detailed account in a former volume. Those who do not possess the original, and who are interested in the subject, will find all they wish for in Dr. Bennett's translation, who has added a brief, but clear, account of M. Serres' discoveries respecting the influence of the sanguiferous system over the development of the nervous system.

Lachrymal Nerve.—It is stated in the Medical Repository, on the authority of a private letter from Paris, that M. Amusat has discovered the lachrymal nerve to be a branch of the pathetic, or fourth pair, and not, as has been hitherto supposed, of the ophthalmic portion of the fifth. It is stated also, that Richerand confirmed the fact. If this turns out to be true, it will be extremely interesting when taken in connexion with the late splendid discoveries of Mr. Charles Bell.

II. PHYSIOLOGY.

QUADRI *on the Analogies of the Brain*†.—In the Neapolitan Medical Observer, Dr. Quadri has published a paper containing some very singular, and somewhat novel, views of the human brain. It was formerly supposed, particularly by M. Le Cat, that the brain was nothing more than a homogenous pulp-like curd or custard. Dr. Quadri was first led to doubt this in 1804, by observing, in the preparations of the Anatomical Cabinet at Bologna, that the medullary substance of the brains preserved in alcohol, separated distinctly into lamellæ, each of which was covered with a soft substance, composed of a tissue of globules. From this time Dr. Quadri successfully endeavoured to develope the lamellular structure in brains that were not alcoholized, and he both traced and figured several lamellæ, and engraved them himself; the celebrated Malacarne published them in the Journal of Encouragement, Vol. 2. He then carried his researches, with equal success, into the structure of the brains of quadrupeds, &c., and he was thence led to disagree with the opinion of Gall and

* The Anatomy of the Fœtal Brain, &c. By Frederick Tiedemann, of Hiedelberg, &c. Translated by William Bennett, M.D. pp. 324. 12mo. [14 Plates, by Lizars.] Edinburgh, 1826. Carfrae and Son.

† Osservatore Medic. di Napoli.

Spurzheim, announced in 1809, that the brain consists of a single membrane, with numerous replicatures. He also has discovered that the human brain has the greatest resemblance to that of the torpedo, whence he thinks may be explained the electric-like spasms which characterize some disorders; and he thinks the same fact authorizes him to conclude, that galvanism may be found a much more efficacious remedy, when physicians shall have become better physiologists. It is remarkable that Pelletan, in his late work, has described the brain as a sort of a galvanic pile, without knowing of the similar opinions of Quadri.

Harvey *on the Motion of the Heart and Blood, with Notes, by* Dr. Hingston*.—This is a very beautifully printed edition of the great work of Harvey, with two of the original plates, improved by Lizars. The text is faithfully and accurately printed, and, together with a short biographical preface, in legitimate university Latin, Dr. Hingston has added a very few notes, in some instances illustrating, in others controverting the opinions of his author. We think that Dr. Hingston might, with advantage, have added materially to these, without adding much to the price of the book, and he might have found a much better occasion to shew his knowledge of Greek, than that of quoting the proverb, "one swallow does not make a Summer." Why was there not a portrait of Harvey given?

Dr. J. Black *on Capillary Circulation*†.—Thea uthor has, in this little work, not only concentrated the opinions and experiments of preceding writers, but he has repeated with great care many of those experiments, with several original ones of his own. But we think the work merits a more detailed account than we can overtake in this brief notice, and we shall probably analyze it for an early Number of the Journal. He has prefaced it with introductory observations on general principles, and concluded by applying these to elucidate the doctrine of inflammation. Those who wish to see a condensed account of what is known on those important subjects, cannot do better than read the work of Dr. Black.

Dr. Meyer *on Chyle in the Veins of the Jejunum*‡.—The author, who is a Professor in the University of Bonn, gives the following singular case:—

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* Gulielmi Harveii Exercitationes de Motu Cordis et Sanguinis; quas Notis puaculis instrumendas curavit. Thomas Hingston, M.D. pp. 250. 8vo. [with Plates, by Lizars.] Edinburgi, 1821. Carfrae et Filium.

† A Short Inquiry into the Capillary Circulation of the Blood, &c. By James Black, M.D. S.R.N. and M.R.C.P. London. pp. 176. 8vo. London, 1825. Bolton, printed by Gardner.

‡ Journal Complementaire, for August.

"A robust man, about seventy-nine years of age, died suddenly in consequence of asthma; and his body was taken to the dissecting-room. This man had been healthy from his youth: he had never suffered from any severe illness; only, in the course of long military service, he had experienced some cutaneous affections, particularly the itch. He was a great brandy drinker. About six months before his death, he had complained of his chest, of palpitations of the heart, of jaundice, with symptoms of dropsy; but, by proper remedies, he was so much recovered as to return to his usual habits. At the end of three months, his dropsical symptoms returned, with a purulent expectoration, and œdematous feet. He again became a little better; but shortly afterwards he suddenly felt violent darting pains in the chest, with violent cough, and other symptoms of inflammation of the lungs. He was bled, and the blood exhibited the buffy coat. He felt relieved the following day; but, a few hours after having taken some soup, he died suddenly.

"The examination of the body shewed the following particulars:— A great quantity of serum in the chest, as well as in the pericardium; the lungs adhering to the parietes of the thorax, and full of tubercles, with small cysts containing pus. There was no remarkable alteration in the viscera of the abdomen. The intestines were then taken out, and preserved for the purpose of demonstration. When the different portions of them were submitted to especial examination, on the small intestines vessels of a greyish white were perceived, a little inclining to yellow in some parts, and equally visible on the internal surface of the canal as on the outside. At first they were taken for lymphatics; but a closer examination proved them to be veins. The lower third of the duodenum, the entire jejunum, and a portion of the ileum, were spread over with similar venous ramifications, containing a liquor analogous to cheese: nevertheless, this liquor only existed in the minute ramifications upon the surface of the intestines; but, at the spot where the mesentery is inserted, the venous trunks to which these smaller vessels conducted, contained only common blood. Upon many points might be seen, with the naked eye, the little roots of the white veins advanced to the edge of the valves of Kerking; and it appeared to the Doctor that, pressing lightly, he drove the white liquor contained in the venous branches to the surface of the mucous membrane. The small intestines were full of chyme. No lymphatic filled with chyle was to be found. Unfortunately, the other abdominal organs were not in a state to permit of examination.

"It is not to be doubted, continues Dr. Meyer, that the greyish liquor, which was contained in the smallest branches of the veins, was truly chyle, the colour and consistence of which are in general relative to the quantity of chyme. But it may be asked, how did it happen that the lymphatic vessels contained no chyle, since the patient appeared to have died in the moment of chylification? Circumstances do not permit him to resolve this question; but he conjectures that the venous system may have outlived the lymphatic. Perhaps, the right side of the heart

had outlived the left; in this case, there would have been a prolonged diastole and systole of the right ventricle, which might have determined the absorption of the chyle by the smaller venous branches of the small intestine. The appearance of the heart rather corroborated this hypothesis."

Dr. Mason Good *on Instinct**.—We have here a very learned and well written paper on this difficult subject by the celebrated author of the Study of Medicine, a book which is now in the hands of every professional man in the kingdom. As instinct is a very speculative subject, and as it may tend perhaps to confirm the prejudice which has gone abroad respecting Dr. Good, as a medical writer, we may be permitted to set our readers right upon this. It has been said, that Dr. Good is merely a learned, not a practical, writer, and from want of experience cannot write practically. Now, the fact is, that Dr. Good, previous to his becoming a physician, was for many years in very extensive practice as a general practitioner, and since he became a physician, has greatly extended his former connexions. The prejudice, we doubt not, has arisen from some supposed incompatibility between learning, elegant scholarship, and practical experience in professional knowledge. Whoever reads the Study of Medicine will at once perceive, from the numerous original cases which abound in its pages, that it could not have been written by a person who had no experience. But let us see what Dr. Good has said of instinct.

"It has been derived from mechanical powers, from mental powers, from both together, and from an imaginary intermediate essence, supposed equally to pervade all embodied matter, and to give it form and structure. It has been made sometimes to include the sensations, sometimes the passions, sometimes the reason, and sometimes the ideas. It has sometimes been restricted to animals, and sometimes extended to vegetable life. The subject, therefore, in the present day, lies involved in no small degree of confusion; and even the term itself, by which the general fact to which it relates is expressed, that of instinct, or instinctive power, has been, and still continues to be, used in so loose and unsettled a sense, that there is not a Dictionary we can turn to, nor, perhaps, interpretation we can form in our own minds, that presents us with a clear and definite idea upon its nature."

After a very learned and masterly view of the whole subject, which we regret our limits will not allow us to follow, Dr. Good concludes thus:—

"The general corollary, then, resulting from these observations, is as follows: that Instinct, as already defined, is the operation of the principle of organized life, by the exercise of certain natural powers

* Medical and Physical Journal, for November.

directed to the present or the future good of the individual; while reason is the operation of the principle of intellectual life, by the exercise of certain acquired powers directed to the same object. That it appertains to the whole organized mass, as gravitation does to the whole unorganized: equally actuating the smallest and the largest portions, the minutest particles and the bulkiest systems, every organ, whether solid or fluid, so long as it continues alive. That, like gravitation, it exhibits, under particular circumstances, different modifications, different powers, and different effects; but that, like gravitation too, it is subject to its own peculiar division of laws, to which, under definite circumstances, it adheres without the smallest deviation; and that its sole and uniform aim, whether acting generally or locally, is that of perfection, preservation, or reproduction.

"Of its mode of existence, we know nothing; but as little do we know of the principle of gravitation or of mind. We can only assure ourselves that they are distinct powers—perhaps distinct essences; and we see them acting, as well separately as conjointly, for the general good. Under their accordant influence, we behold the plastic and mysterious substance of matter, which we must be especially careful not to confound with themselves, rising from 'airy nothing' into eternity—ascending from invisible elements into worlds, and systems of worlds—from shapeless chaos and confusion into form, and order and harmony—from brute and lifeless immobility into energy and activity, into a display of instinct, feeling, perception—of being, and beauty, and happiness. One common design, one uniform code of laws, in different but consenting divisions, equally simple and majestic, equally local and comprehensive, pervades, informs, unites, and consummates the whole.

"The effect, then, being one, the mighty cause that produced it must be one also: an eternal and infinite unity—the radiating fountain of all possible perfections—ever active, but ever at rest—ever present, though never seen—immaterial, incorporeal, ineffable; but the source of all matter, of all mind, of all existence, and all modes of existences."

III. PATHOLOGY.

Fosbrooke *on the Relations of the Kidneys and the Brain.*—The title of this brief volume will at once shew the great importance, but greater difficulty of the subject; and Mr. Fosbrooke, who is not unknown as a medical writer, has done himself credit by the line of inquiry which he has started. In so short a notice as this must necessarily be, we cannot go into any of his facts and illustrations; but we shall probably take an early opportunity of laying before our readers what we find in them that is important or novel.

Dr. Goodman's *Case of False Membrane in the Stomach.*—The

stomach in this case was in a condition which is often referred to by medical writers, as preventing the operation of medicines. The internal surface was lined with a thick investment of mucus, so tenacious and dense as to appear like an additional coat, and nothing but actual experiment could have convinced me that such a vitiated secretion could be thus fixed on the villous coat. In attempting to remove it, I inverted the stomach, and washed it, first in cold, then in warm, and subsequently with soap and water, but without removing any notable quantity. I next rubbed it between my hands, as if washing a cloth, by which a few flakes were detached, but the greater part of it still adhered. If this condition of stomach frequently occurs during disease, it must be next to impossible that medicines can be administered with any advantage. There was a considerable quantity of æther mixed with the fluids in the stomach, but even this powerful agent might as well have been placed in contact with dead matter, for any effect it could have produced on a surface coated as this was. The same condition is thought to exist in cynanche trachealis, which frequently renders emetics almost entirely unavailing, unless the most powerful and stimulating are administered. In delicate females, habitually costive, and leading sedentary lives, I have several times suspected this state of stomach, which rendered the system almost utterly insensible to the presence of medicines. One instance of this kind, which occurred in the practice of my much esteemed friend, Dr. John W. Buckler, of Baltimore, required the most violent emetics at a time when the patient appeared so much prostrated that a slight exertion must destroy her. The emetic, after some very violent efforts, caused the discharge of a thick, lining, mucous substance, resembling an entire coat of the stomach broken into large flakes, and a great improvement in her state of health immediately ensued. The extreme prostration in this case was the consequence of want of nutrition, as the digestive function must have been for some time altogether suspended. It would be of great moment if we could determine with any certainty the condition of system leading to this state of the stomach, which always must indicate the use of emetics, notwithstanding the apparent debility may be truly alarming.

Dr. Beck's *Pathology of Laryngitis.*—Dr. John B. Beck, the brother of the celebrated author of the Medical Jurisprudence, and well known by his Essay in that work on Infanticide, has given in the New York Medical Journal, of which he is the editor, an excellent paper on laryngitis, whence we have taken the following extract:—

"General febrile or inflammatory excitement, although present in some cases, are more generally wanting, and in the very worst cases, they do not make their appearance from the commencement to the termination of the disorder. So striking, indeed, is this fact, that by Bayle it is considered as constituting a positive evidence of there being two distinct affections, to which the larynx is subject; the one being

an œdema of that organ, without fever or inflammatory symptoms; while the other is the inflammatory affection described by Boerhaave and other authors. To me, however, there does not appear to be any just ground for this distinction. In all the cases recorded by Bayle, which are precisely similar to some of those of Baillie, Farre, &c., there is no question that the disease, primarily, consisted in a subacute inflammation of the mucous membrane of the larynx, terminating very speedily in effusions underneath it. Looking upon it in this point of view, it is perfectly easy to account for the absence of febrile symptoms, as well as for the fatal nature of these cases. The effusion relieves the local inflammation, and thus prevents reaction; at the same time that it mechanically closes the rima glottidis, and thus destroys the patient. If the inflammation of the laryngeal membrane on the other hand be greater, febrile symptoms may come on, and, instead of this passive infiltration in the subjacent membrane, the local inflammation may terminate in the effusion of coagulable lymph on the surface of the membrane, and in ulceration and destruction of the parts. If this view be correct, it is evident that the only difference in these cases consists in the degree of inflammation, and the necessary consequences of it resulting from the peculiar structure of the larynx, not as Bayle supposes, in any specific difference of disease.

"In many, perhaps in a majority of cases, it has been remarked that the patients had been previously subject to catarrh, quinsey, &c. From the vicinity of the organs affected in these complaints, it can readily be conceived how inflammation of them would predispose the larynx to be similarly affected.

Appearances on Dissection.—"On opening the body of a person who has died of laryngitis, the tonsils and the velum pendulum palati will be found perhaps slightly inflamed. In some instances the posterior and upper portion of the tongue is also somewhat inflamed. The epiglottis most generally exhibits the evidences of high inflammation, and is much thickened; it frequently stands erect, so as to leave the cavity of the larynx almost entirely uncovered. In the larynx various morbid appearances present themselves, depending upon the violence and duration of the previous disease. In some instances no other evidences of disease are observable, besides a simple redness and thickening of the mucous membrane of the larynx. This thickening is frequently so great as nearly to obliterate the cavity of the glottis.

"In other cases, together with the inflamed condition of the mucous membrane of the larynx, there is found an effusion of serum underneath it, so great as completely to close the rima glottidis.

"In other cases, again, the inflammation of the membrane of the larynx terminates in effusion of lymph upon its external surface, by which the passage of the glottis is either completely closed, or very much diminished in size.

"Occasionally purulent matter has been detected on the larynx, and in one case an extensive abscess was found between the mucous membrane, and the muscles of the larynx. Generally, the trachea is un-

affected. In some cases, however, slight traces of previous inflammation are discovered. It is not followed by effusion, and, in no instance, I believe, has any thing like the croupy membrane been formed.

"The lungs are also more or less affected. In two of the cases recorded by Dr. Baillie, "the lungs did not collapse upon taking off the sternum." In one of Dr. Farre's cases, the lungs were slightly congested, and in the other, there was some accumulation of mucus in the cells of the lungs, and a slight effusion of serum into their reticular texture. The left pleura partially adhered, and the cavities contained rather more fluid than is natural to them. By Bayle, too, it is stated that the lungs were found gorged with blood, By the same writer, the blood is asserted to be darker coloured, and more difficult to coagulate than healthy blood. These appearances are very justly ascribed to the deficiency of oxygen, with which the lungs are supplied, and the consequent superabundance of carbon in the blood; and it is to this interruption in the process of respiration, that death in this disease is to be ascribed. What confirms this opinion, is the fact that the condition of the lungs resembles in every respect that of those who die in consequence of suspended respiration from other causes."

DELAFIELD *on Partial Paralysis of the Face.*—The following cases from the same excellent Journal are important illustrations of Mr. Shaw's well-known paper founded upon Mr. C. Bell's recent discoveries.

Case 1.—N. Van Dine, captain of an American merchant vessel, in consequence of exposure to cold during the night, was attacked with rheumatism, affecting the neck, shoulder, and hip of the left side. This disease continued with unabated violence during twenty days, when he was seized with violent pain in the left ear, and behind the angle of the jaw. The next day he found the left side of the face paralysed. He was at this period at sea, on his voyage home, and it was six weeks after the appearance of the disease before I saw him, which was in December, 1822. The face was then nearly in the condition in which it was first attacked. On a first view of it, nothing remarkable was perceived, except that the right angle of the mouth was slightly drawn to one side. The moment, however, that he spoke, the whole face was horribly contorted, and when he smiled or laughed, this took place in a still more extraordinary manner. In either of these actions, the left side of the face remained entirely passive, while the muscles of the right were in full action. In consequence, the angle of the mouth was drawn very much to one side. Not only the muscles of the left side of the mouth and nose were paralyzed, but those also of the eyelids and forehead. Consequently, the patient could not close the left eye, and it had become inflamed, and its sight much impaired. When the muscles on the right side of the forehead were in action, and the brow was wrinkled, the skin on the left side was perfectly smooth. He complained also of some difficulty in moving the tongue, and when it was thrust out of the mouth, it was drawn to the right side; this caused some difficulty in speaking, and his voice was thick and indistinct.

All these paralyzed parts it will be recollected are supplied by branches of the portio dura, while, on the other hand, the muscles in the face supplied by the fifth pair, retained their powers unimpaired. He could close his jaws with equal force on both sides; the action of the buccinator and orbicularis oris continued perfect; and the sensibility of the skin of the paralyzed cheek was not at all diminished.

In this case, it was evident that the paralysis arose from a transference of rheumatic inflammation to the portio dura of the seventh pair. Under this impression, the patient was ordered to be cupped over the origin of this nerve, and immediately afterwards a blister drawn in the same situation. The cupping was directed to be repeated as soon as the blister healed, and the blister reapplied. The prescriptions were but carelessly attended to; the cupping and blistering were performed but twice, and that at the interval of some weeks. Considerable improvement in the appearance of the face, notwithstanding took place; but the patient again embarking on a voyage, I never ascertained the result of the case *. The effect of the treatment in this case, although unsatisfactory, was sufficiently successful to encourage me to repeat it in the next, which soon afterwards occurred.

Case 2.—" Miss Adeline B—, aged 17, applied to me on the 5th of March, 1823. A fortnight before I saw her, she had begun to feel a severe pain behind the angle of the jaw, and below the ear, on the left side of the face, which continued gradually increasing for a week. At this time she was exposed to a severe snow storm, and immediately on arriving at home, felt her mouth drawn to one side. In a few hours the left side of the face was completely paralyzed; she had all the symptoms which I have detailed in the previous case, and these had gradually increased until I saw her. She was immediately cupped, a blister drawn over the origin of the portio dura, a cathartic of calomel and jalap ordered to be taken immediately, a pill of one grain of calomel directed to be taken every night, and half an ounce of sulph. magnes. every morning.

" On the 12th I saw her again, and there was a great improvement in all the symptoms; the mouth was but slightly drawn in smiling or speaking, and she could almost close the left eye. The cupping and blistering were repeated, and the other treatment continued. On the 24th she was perfectly cured. This patient was affected with the same disease, when six years of age, but in a slighter degree. It continued between two and three months, and then gradually subsided, until it was perfectly cured."

Case 3.—" Theresa Waters applied at the Eye Infirmary in the month of April, 1823. She had been the subject of partial paralysis of the jaw in December last. On the 10th of December, 1822, in consequence of unusual exposure to cold in washing clothes, she was suddenly seized with acute pain below the left ear. This continued two

* I have since learned, that this patient entirely recovered a short time afterwards.

days, when she discovered that the left side of her face was paralyzed, the mouth drawn to one side, the eye incapable of being closed, and watering profusely, with the other symptoms of this disease. She was not prescribed for by any physician, but first applied a poultice to the seat of pain, which gave her some relief. After three weeks had elapsed, she began to apply blisters to the same situation, which were repeated three times. Under this treatment she slowly improved, and when I saw her, very little remains of the disease could be discovered."

Yellow Fever not Contagious.—Dr. Costa read, before the Royal Institute of France, a Memoir on this subject. The facts and observations related in this work have been collected from the sources of the disease, Dr. Costa having been physician to a lazaretto. After describing the state of affairs at Barcelona, and the precautionary measures adopted on the frontiers, which he considers as very inefficient, had contagion really existed, the author does not hesitate to affirm that the disease is not contagious. Nay, so persuaded is he of this fact that, together with MM. Lassis and Lasserre, he proposes to make experiments on the subject. He requests that clothes which have been worn by persons who have died of the disease, may be sent to him from the Havannah, or wherever the disease is found to exist, and these clothes, hermetically sealed during the passage, shall be worn by these gentlemen, without making use of any disinfecting medium.

M. Flourens *on the Sense of Hearing and the Causes of Deafness**.—The author from several experiments concludes :—

1st, That the destruction of the tympanum and hammer do not materially affect the hearing.

2d, The removal of the stirrup weakens it considerably.

3d, The destruction of the membrane which covers the fenestrum ovale (the stirrup being still removed) weakens the auditory sense still more.

4th, The replacing of the stirrup restores to it some degree of energy.

5th, The rupture of the semicircular canals renders suddenly the hearing painful and confused, and causes, at the same time, a quick and violent agitation of the head.

6th, When the vestibule is exposed, there does not result any remarkable affection of the hearing.

7th, The partial destruction of the nervous expansion in the vestibule partially destroys the sense. The complete destruction destroys it entirely.

The part therefore, most essential to the function, is the nervous expansion of the vestibule; and strictly speaking, it is the only indis-

* Bulletin des Sciences Medicales.

pensible part, the others merely contributing to the extension, the energy, and modifications of the function, or to the preservation of the organ.

In making a practical application of these experiments, there is one cause of immediate and absolute deafness apparent, namely, the destruction of the nerve or of its expansion in the vestibule; and there are several causes of dulness of hearing, such as the destruction of the stirrup, of the vestibulary orifices, and of the walls of the vestibule and semicircular canals.

The previous experiments of M. Flourens having shewn that the sense of hearing is lost by the removal of the cerebral lobes, without any part of the ear being touched, it follows that the loss of the organ of sense is completely distinct from the loss of the organ of sensation; and as each of these species of deafness is attended by peculiar symptoms, we may hence be able to ascertain the part affected; and, having discovered the seat, may thence determine the comparative importance and severity of the disease.

IV. MORBID DISSECTIONS.

M. Andral's *Case of Encysted Abdominal Tumour.*—A man was admitted into La Charité with a tumour in the abdomen, filling both the hypochondria and the epigastrium. Some months previously he had felt dull pains in the right hypochondrium, and had the jaundice. He died at the end of some time, having suffered by turns the symptoms of phthisis, of enteritis, and peritonitis. On opening the body, tubercles were found in the lungs; a sero-purulent fluid, with false membranes in the peritoneum; redness of the large intestines; besides the three following diseased appearances:—1. A tumour of the size of a full-grown fœtus; head situated between the right kidney and the concave surface of the liver: it appeared to have originated from the peritoneum; its parietes were fibrous, and it was filled with a purulent fluid, in the midst of which the remains of hydatids were floating. M. Andral believes that this cyst had originally been an hydatid sac, in which hydatids had been successively broken, destroyed, and replaced by pus. The tumour had displaced the liver, which, driven out of the right hypochondrium, filled the epigastric region, and formed a prominence on the left side; besides which, the right lobe of the liver, pressed by the tumour, had suffered a complete atrophy; whilst the left lobe had increased in a very unusual degree. 2. A second cyst, filled equally with broken hydatids, was situated on the course of the biliary vessels, and compressed them. Around and between the broken membranes of the hydatids, there was a quantity of suetty matter, similar to that which is sometimes found in ovarian cysts, where it is usually mixed with hair. 3. An old and solid coagulum, which completely obstructed the vena cava inferior, from the origin of the renal vessels to a little above the primitive iliacs. This clot resembled those fibrous

layers which fill the sac of aneurisms. The parietes of the vein had suffered a remarkable thickening, as if the result of chronic inflammation; nevertheless, there was not any œdema of the lower extremities. —*Archives Generales.*

Mr. Torbet's *Case of Intestinal Calculi.*—A boy of twelve years old, had been always of stinted growth, and emaciated habit, with bad appetite, great thirst and frequent purging—the stools thin, watery, and yellowish. There was no general hardness nor tumefaction of the abdomen, but a part in the right hypochondrium was full, hard, and at times painful. He was treated as for an abscess of the liver and mesenteric disorder. Burning pain in the stomach with flatulence and vomiting, and he soon died.

Dissection.—No general hardness or enlargement of the abdomen; but in the right hypochondriac and epigastric regions (exactly in the site of an enlarged liver) a hard unyielding tumour was felt. The tumour, on opening the abdomen, was found to be formed by the ascending and transverse portions of the colon, filled apparently by one vast concretion, about seven inches in length. On further examination, this mass was found to consist of three pieces, articulated, as it were, to each other—the first $3\frac{6}{8}$ inches long, occupied the ascending part of the gut; the third, $2\frac{2}{8}$ inches in length lay in the transverse portion; and between these, the second piece, one inch in length, was interposed. Of this middle piece, one of the articulating surfaces (that next the ascending piece) was convex, the other concave; and the contiguous surfaces of the other pieces were moulded in a corresponding manner, concave and convex, so as to form at the bend of the gut a kind of double ball-and-socket joint. At one end, (the lower) this mass was $7\frac{5}{8}$ inches in circumference, at the other $5\frac{7}{8}$; and the whole, when removed from the body, weighed $12\frac{1}{2}$ ounces.

No adhesions existed between the colon and the concretions, which do not appear to have completely filled the cavity of the gut, as a quantity of muco-fœculent fluid found between them, and as the state of the bowels during life sufficiently indicate. Nor were the coats of the colon thickened, nor were any other marks of disease found in the cavity of the abdomen, except an adhesion—for about the space of an inch between the colon and the stomach, and a certain degree of displacement with respect to the liver and small intestines, caused by the presence of the mass we have described.

The omentum was large, and contained a considerable quantity of fat, although the rest of the body was in a very emaciated state.

Description of the Concretions.—1*st*, *External Appearance.*—Instead of the soft brown surface, like amadou (or the skin of the new horns of the deer) which the more common varieties present, these calculi resembled *bone* in appearance; so much so, indeed, that the middle piece was at first mistaken by many for an apophysis. On more minute examination, however, the surface was found not to be uniform like bone;

and in several places portions of the coverings of the seeds of the oat (such as often remain in oatmeal) were found firmly imbedded in it, and very little changed from their natural appearance.

2*d*, *Internal Structure.*—On dividing this, the middle piece, with a fine saw, the cut surfaces presented the same fibrous appearance as the more common varieties—the fibres also were evidently of the same kind, and constituted a soft spongy net-work, filled or mixed with an earthy matter. The nucleus consisted (or seemed to consist) of these fibres; and the earthy matter, though it penetrated to the very centre, occupied chiefly the outer parts, and was arranged concentrically as in urinary calculi, alternating in some measure with the fibrous.

3*d*, *Chemical Analysis.*—The specific gravity of the middle piece, when first immersed in water, was 1105, when thoroughly wetted, 1290—exposed to the fire, a portion of this piece lost by ignition 32 per cent; another portion, from a part apparently the least earthy, lost in a similar manner 56 per cent; and a third portion, from the most earthy part, lost, under similar circumstances, 24 per cent.

Dr. Bishopp's *Case of Obliteration of a Strangulated Hernia.*—A miller, aged twenty, had a recent attack of inguinal hernia, from lifting a sack of corn, which could not be got under by the taxis, and he resisted the operation for three or four days.

"Finding, at length, that he had no possible chance of recovery without the operation, all his symptoms having been more pressing, with the addition of hiccup, during the last night, he submitted to it. The sac contained about three ounces of a serous fluid. The intestine, unaccompanied with omentum, was slightly discoloured, its texture apparently uninjured, but very firmly embraced by the mouth of the sac, was reduced with sufficient readiness. The urgent symptoms now nearly ceased for several hours, but afterwards returned with increased urgency, more especially the bilious vomiting, acute pain in the bowels, and tension of the hypogastric region. Exhausted by these, he remained in a very composed state about twelve hours; and now yielded to the violence of the vomiting and pain, twenty-four hours after the operation.

On opening the body, forty hours after death, it appeared that the intestine had been completely reduced; traces of considerable inflammation were obvious over the whole cavity of the abdomen, but not the slightest approach to gangrene; the inflammation was most considerable in that portion of the gut (part of the ileum) which had been strangulated. This portion I cut out, and, on minute examination, found that it measured an inch and a half, and was so completely impervious throughout its whole extent, as not to admit either the smallest probe or a drop of water, in consequence of very firm cohesion of the villous coat, most clearly produced by the adhesive inflammation, giving the whole a very notable degree of firmness and thickening; so that nothing like mobility between the coats could be perceived when the sides of the gut were rubbed together between the thumb and finger.

It is unnecessary to remark, that this singular variety of obliteration of the canal of the strangulated intestine was a circumstance in the history of hernia which neither myself nor Dr. William Arnold, who kindly aided me in the operation, were prepared to meet with. The fact appeared, indeed, to militate against the received opinions respecting the pathology of inflammation of the mucous tissue, at least where a morbid process had not been previously established. The fact was equally novel to Sir Astley Cooper, to whom I related the case."

V. SURGERY.

Dr. Ammon *on the Surgery of the Eye in France and Germany* *.—The following paper on the state of ophthalmic surgery in France and Germany, cannot fail to interest all our readers who have attended to this rapidly improving branch of professional knowledge and skill.

"In France the knowledge of the diseases of the eye remains stationary at that point which it long ago attained, whilst the Germans are cultivating this branch of medicine with greater zeal, and are striving to bring it to the highest point of perfection. A general view even of ophthalmic science in France, as it now exists, will be sufficient to confirm this statement; and a closer insight into the practice of the French oculists, gives the sad result that it contains nothing but the glory of their ancestors—that it is the same as in former times. With us, on the contrary, this science has reached a point, which may be truly called the culmination point—what was formerly prepared by Barth, Richter, and others, has been brought near to perfection by Beer, J. A. Schmidt, Himly, Von Walther, Langenbeck, and Graefe. Since the beginning of the present century, ophthalmic surgery in Germany has taken a peculiar direction—on the one hand, it has become an independent science, and on the other, it has been considered more in relation to the whole organization. The connexion, however, of ophthalmic surgery with surgery in general, scarcely exists in France. Both are separated, and when a few celebrated surgeons occupy themselves with diseases of the eye, they are exceptions to the general practice, and confine themselves merely to the operative part. Even in the year 1822, the charlatanerie of several oculists in Paris could scarcely be exceeded. At the corner of the streets there was no lack of advertisements from the *medecins-oculistes*, announcing their eye ointments, *pommades antiophthalmologiques*, and lotions, and particularly boasting of their talents. The announcement of a *M. G. de la Chanterie, celebre medecin-oculiste* was to be found in all coffee and eating-houses, and was even sent to all strangers at their own lodgings; and in several of the provincial towns this species of quackery was, if possible, still carried to a higher pitch.

* Gräfe und Walther's Journ. für Chirurgie.

"In France there are no particular institutions whatever for the purpose of forwarding the study of the diseases of the eye. Notices of lectures on this important branch of medical science, are to be sought for in vain in the catalogue of the celebrated Faculty of Medicine at Paris; they were formerly attempted, but did not succeed. The diseases of the eye are treated in the lectures as a part of external pathology. As far as regards the literature, there certainly are not wanting new works and compendia, in which the eye-diseases are treated apart from the rest of surgery; we will only name here Delarue and Demours. But a comparison of these works with those of Guillemeau, Maitre Jan, de St. Yves, and Guerin, clearly shows that they have not advanced beyond that point which their forefathers had obtained; whilst Demours, with a succession of tediously long cases, and a number of questions and answers, leads the reader to no conclusion, but tires his patience—Delarue endeavours to make up for the deficiency of his materials by the most extraordinary declamation. Since the year 1819, there has existed a French Journal for diseases of the eye. Guillie began it with the title of *Bibliotheque Ophthalmologique*, with the assistance of Dupuytren, Alibert, Pariset, Lucas, and Nauche. This journal has undoubtedly for its object the promoting in France, that study which unfortunately has been there too much neglected; but its plan appears but ill suited for the accomplishment of this purpose. This journal, instead of beginning with establishing a scientific symptomatology of the diseased eye, a thing so much wanted in France, enters directly on the treatment of diseases, with the pathology and nature of which the French appear unacquainted. Instead of commencing with a natural division of the different kinds of ophthalmia and their diversified treatment, it immediately recommends certain empirically tried remedies, or contains the history of some operation. 'Inflammation of the eye, with its consequences, is a wide field for the oculist. Every one flatters himself with knowing it; the lowest man in the profession knows how to speak of rose-water and sugar of lead, but it is granted only to a few to have a clear insight into this branch of ophthalmic diseases.' This assertion of Dr. Wenzel's, (Lib. sup. cit.) severe as it is true, is characteristic of the ignorance of the French oculists. Guillie could have taken no better motto for his journal than the following passage from Bacon—'Frustra magnum expectatur augmentum in scientiis ex superinductione et insitione novorum super vetera, sed *instauratio facienda est*, ab intimis fundamentis, nisi perpetuo libet circumvolvi in orbe cum exili et quasi contemnendo progressu.' *Nov. organ.* 31. The French literature contains no compendium which answers to the demands of all. Had Delarue considered that the eye can only be examined by the eye, he would not have failed to enrich his work with a better symptomatology, and more certain rules for distinguishing between the different diseases. Demours' abridgment from his large work has the same fault which is censured with so much justice in his larger one. What Roux, Lassus, Richerand, and Boyer contain on diseases of the eye, in their works on surgery, is in part not complete, and in part taken from the

work of Wenzel and others. Sabatier, in his operative medicine, has given, in the first edition of that work, every thing which relates to the operative part of the eye, in a very creditable manner, but in the new edition, by Begin and Sanson, this part is considerably neglected. Works on any particular diseases of the eye are of a very rare occurrence in France, and with the exception of Guillie's work on cataract and amaurosis, no similar work of the kind has of late appeared, unless we except some inaugural dissertations from the candidates for degrees at Paris or Montpellier. The impulse given to the study of physiology in France, has brought some important and yet disputed points on the physiology of the eye under examination. Besides Magendie's investigations on the mode in which substances are reflected on the retina, the nature and substance of the iris have been examined, together with the nourishment of the lens, and the existence of the liquor Morgagni. It would lead us too far from our present purpose, were we to enter into an examination of the opinions of these different anatomists and surgeons. The subject has been treated in Germany by Von Walther, in his ciliary-nervous system, and Graefe in his observations on the use of the ciliary processes, and several others, whose works are familiar to our readers. Any work, however, equal to that of Soemmering's, or Zinn's, is not to be found in the French literature. And it is quite a matter of surprise, that in neither of the two countries (France or Germany), where anatomy is cultivated with such zeal, has a work on the surgical anatomy of the eye appeared.

"Although there exists in Paris several excellent institutions for the education and provision of the blind, there is not one single institution solely for the reception of eye diseases, and in none of the large hospitals in the metropolis are there any proper arrangements for the treatment of these affections. The complaint which Wenzel, eight years ago, made respecting this shameful neglect, we must now repeat. Particular apartments, with suitable arrangements respecting the admission of light, &c., for the treatment of diseases of the eye, are not to be found in any hospital. Every unfortunate patient is dispersed throughout the wards, protected only from the influence of the light and draughts by the bed-hangings, so that the disease is as frequently made worse as it is mended. The difficulties which prevent the necessary arrangements for treating diseases of the eye in these institutions are unknown to us, but it appears as if no one wished them to be otherwise. Since the erection of ophthalmic institutions, the study of diseases of the eye have taken a high and fixed direction, and this epoch is one of the most important in the history of this science. No where, however, is this change seen in a more extraordinary manner, than in the history of ophthalmic medicine in England, which, since that period, has undergone a complete change, and is in every respect improved. To the neglect of this point, we think, must be attributed the fact of the French being behind both the Germans and English in the knowledge of ophthalmic medicine.

"We will now turn to the merits of the French in ophthalmo-noso-

logy, and in the treatment of ophthalmic diseases. The important points respecting the inflammation of the eye are very superficially treated in the French literature. With the exception of De Febure's monography, or Treatise on this subject, we are not acquainted with any similar work of the kind. Nor has the contagious ophthalmia, which has so much occupied the attention of medical men of late years, a better fate. Although the French armies suffered most dreadfully from this complaint, although the French invalid houses were crowded with the blind, who lost their sight from this disease, yet the mode of subduing this disease was never brought under discussion by them; and only Larrey and Desgenettes gave their medical opinions on the disease. Even recently, when this complaint attracted the attention of the French government, and when it became the subject of the researches of several authors, we do not discover among the French that enthusiastic zeal which the Germans have displayed in the examination of this subject, and to which we are indebted for so many valuable investigations into the nature of the disease. The works, from Baltz, in 1815, to Græfe, in 1823, are known to all Germans, and do not require here any further notice. It may not be amiss, perhaps, to make a few historical remarks respecting the contagious ophthalmia, which do not appear to be generally known. Græfe, who has treated this subject most thoroughly, believes that here and there traces of a similar disease are to be found in the ancients. (Xenophon's Anabasis.) George Bartisch, chief oculist to the Elector Augustus of Saxony, gives, in his work on diseases of the eye, which appeared at Dresden in 1583, descriptions of two kinds of ophthalmia, which, in relation to their symptoms, very much resemble the contagious ophthalmia. Even the dedication page of the book contains a plate of a diseased eye, the appearances of which are extremely similar to the contagious ophthalmia. Bartisch certainly did not suppose that this disease propagated itself by contagion; and he, who was accustomed to examine, according to the time he lived in, with extraordinary minuteness into the causes of this disease, fled to incantation as a refuge, and which he considered as the source of this terrible complaint. The second notice that we have of a contagious ophthalmia having formerly prevailed, is from a work which Haller mentions in the following words: —"*Jacques d'Ambrose, Medici et Chirurgi, an ab Oculis Contagio.— Paris,* 1605, 4 *lego citari.* Vid. *Bibliothec. Anatomic.* t. 1. p. 307. We ourselves are not acquainted with the contents of this work, but we take the present opportunity of drawing the attention of medical men to it, that in the investigation into the history of so dreadful an ophthalmia, they may not lose the slightest help. Several French physicians deny the contagious power of this inflammation. Whilst Delarue does not meddle with this important point, Demours gives it as his opinion, that the contagious complaint is produced by an epidemic influence. Other physicians, among whom I will only name Guillie, are convinced of the contagious nature of this disease.

"Iritis, its causes, progress, and cure, have been thoroughly investigated by the Germans, and they have given certain diagnostic marks,

by which the complaint may with certainty be ascertained. If, however, this disease is not unknown to the French physicians, it is very frequently mistaken by them; and if at first the strict antiphlogistic treatment were not adopted against every disease of the eye, the inflammation of this part of the organ of sight, would only too often run through all its stages undiscovered, till the mistake was made known in its dreadful consequences. As syphilitic iritis was first made known to the French by the observations of the Germans, so have they cast on us the unfounded reproach, that we attribute every kind of iritis to a syphilitic cause—wonderful delusion! The term *hippus* enjoys among the French no fixed meaning, as with us, where it is either designated to represent spasms of the iris, or a continued fluctuation of the iris from the posterior to the anterior chamber, and *vice versa*. The situation and form of the pupil, and its colour, symptoms from which so much assistance may be derived in forming a true diagnosis, and the importance of which Von Walther has shewn in a classical paper on diseases of the ciliary system, do not meet from French oculists the attention they deserve. Dupuytren, only, is an exception; and his acute perception, and great tact often enable him to foretel, from these circumstances, what course the disease will take. The diseases of the anterior chamber, in which most inflammatory affections are to be found, have attracted the attention of oculists both in Germany and England; we allude principally to the inflammation of the tunica humoris aquei and its consequences, which in France have been quite neglected. Of all the different modes of curing opacities of the cornea, Dupuytren's, in Paris, enjoys the most extraordinary fame. It consists shortly of the following means; if there is an inflammation of the cornea, or only of the neighbouring parts, and this is but slight, Dupuytren orders blood-letting, or directs the application of some leeches. Then, in about four days, some gentle purgatives will be given. As soon as the inflammatory symptoms are removed, he orders the following powder to be blown into the eye morning and evening:—℞ *Tuthie preparée, Sucre candi, calomelas anglais, a parties egales.* This is continued for some weeks, and seldom fails within that time to effect its object. If the opacities are already very old and large, and approaching to a leucomatous nature, then a seton at the nape of the neck is necessary, and the powder is blown into the eye for some minutes at a time.

"In adults, commencing disorganization of the cornea, which threatens to go over into a staphylomatous metamorphosis, is successfully treated by Delarue with caustic lotions. The deceased oculist, Pellier, of Montpellier, states, that he cured, in 1779, a leucoma, by means of a seton drawn through the opake part of the cornea. The seton consisted of a double silk ligature, and was daily anointed with the unguentum basilicum. Delarue also assures the profession, that he has tried the same means with success. If, however, Juvenal's words are not applicable,—

"——— non hic,
Cantatur, res vera agitur."

still the thing is extremely remarkable, and deserves a more minute consideration. Dupuytren also employs, with success, in very prominent disorganization of the cornea, conjunctiva, &c., gentle pressures gradually increased, which he effects by means of small compreses, made of charpie, and covered with linen; these he makes large or small according to circumstances, and then binds them on to the projecting part. The antiphlogistic plan of treatment is the one generally employed in all diseases of the eye, and Sangrado's assertion, '*c'est un erreur de penser que le sang soit necessaire à la vie, on ne peut trop saigner un maladie*,' is unfortunately echoed by too many. The slightest inflammation of the eye requires, in France, blood-letting; and without leeches, the most trivial catarrhal ophthalmia will not be treated. In short, the French go into two extremes in the treatment of ophthalmia; generally they employ an antiphlogistic, and locally an irritating plan of treatment. The topical applications in general use are lotions. Cataplasms, also, are more frequently ordered in the French than in the German hospitals. Whilst the blowing of different kinds of powders on the surface of the eye, is entirely done away with in Germany, and the application of these substances by means of a pencil, is substituted for it; one still sees this plan daily employed in the Hotel-Dieu. Dupuytren is a great friend of this mode of employing local applications, of which calomel is his favourite. Fischer, a German surgeon, several years ago recommended the use of this form of quicksilver locally, in acute ophthalmia, particularly in corneitis, when it has passed over into the chronic stage, and when the whole anterior chamber, as well as the iris, are also sympathetically affected. I employed it once myself with advantage in a staphyloma, which was the result of an ophthalmia neonatorum; and by the long continued use of the calomel, the projection of the cornea disappeared, and the little child could afterwards close the eyelids with ease. In one case the cornea resumed its transparency, and the power of vision was restored.

"Dupuytren, after a continued use of the belladonna internally, for the space of ten years, is perfectly convinced of its efficacy in long standing cases of scrofulous ophthalmia, and in the inflammatory symptoms occurring after depression of the cataract, which he generally takes to be those of *retinitis*. He gives either the *pulvis belladonnæ* in the dose of 3 to 12 grains and upwards, or the extract of bell. from 1 to 3 grains, in six pills, of which two are to be taken every hour. Blood-letting, leeches, emetics, and strong derivantia, as epispastica, and blisters; frictions from tartar emetic ointment, and setons, are the other medicines which are at present used in the treatment of obstinate ophthalmia, amaurosis, and incipient cataracts, by the French surgeons. To the nature and origin of encysted tumours (*kyste sereux*) in the lamellæ of the cornea, which have neither been described nor observed in Germany, Dupuytren has lately directed his attention. This surgeon observed in a child a serous encysted tumour, which developed itself between the lamellæ of the cornea, and which he at first view conceived to be an opacity of this coat. This remarkable pathological appearance

was the consequence of a blow from a stone, which had struck the eye of the child six weeks before. Dupuytren introduced a cataract-needle into the small cyst, and moved the instrument up and down in it, in order to irritate its inner surface. The fluid in the tumour was thus evacuated; but in fourteen days afterwards it formed again. The operation was again repeated, and adhesion to the sides of the sac took place; but opacity of the cornea remained behind. The mode employed for the removal of staphyloma, in France, is either Scarpa's, or a modification of Scarpa's operation. Pterygia are also removed there by scissors, bent in a line parallel with their handles. An artificial eye is frequently worn after the removal of staphyloma, although some recommend it only to be employed after the extirpation of the bulb. We cannot let the present opportunity go by without speaking of the employment of senega in different diseases of the eye, the excellent effects of which Dr. Schmalz, of Pirna, in the course of ten years, had an opportunity of observing. Senega appears to be the vegetable calomel. Wendt, in Erlangen, has already spoken of its employment and use in the treatment of hypopion. Within the space of twenty-six years, this physician had an opportunity of observing the good effect of this plant in suppuration of the eye no less than thirty times.

"*Fistula lacrymalis.*—Notwithstanding the numerous and not unfrequently subtile treatises on the diseases of the lachrymal sac and nasal duct, for which Germany is indebted to the talents and researches of Schmidt, Himly, &c. still the treatment of this disease, vulgarly called fistula lacrymalis, remains one of the most unpleasant and tedious parts of surgical practice. In France there exists very little precision as to the nature of the complaint; still Dupuytren is, on the whole, successful in the treatment of it. Roux, Dubois, and the late Beclard, with several others, employ needles, or pieces of lead, or pieces of catgut, for the dilatation of the narrowed canal, or they modify Desault's mode of operating, according to Scarpa's directions. Dupuytren's mode of operating, the bringing of a gold or silver canula into the nasal canal by an incision in the lacrymal canal, which has been known to German surgeons for a long time past, I saw frequently performed by Dupuytren himself. The merit of this mode of operating is due to Joubert; and Dupuytren can only be called the reviver of it. After the puncture of the lacrymal sac has been effected, in the performance of which he pays no attention to the tendon of the orbicularis, but only to the nasal process of the superior maxillary bone, he directs the patient, in order to see whether the nasal canal be free, to hold the nose, and make a strong inspiration and expiration; if in the act of expiration, air comes out of the wound, then the object of the operation is generally accomplished. By the strong inspiration or expiration which one is compelled to make the patient perform, it sometimes happens that a quantity of air escapes into the cellular membrane of the inferior eyelid, and the neighbouring parts, so that emphysema occurs, producing a distressing tumour of considerable size. I saw this accident occur in two cases which Dupuytren operated on. The swelling was dispersed by the application of

cold, in the space of twenty-four hours, but the cicatrization of the wound was retarded. If there should be a fistula, the edges of which are callous, Dupuytren always touches them with the nitrate of silver on the introduction of the canula. We will give the opinion of two of Dupuytren's scholars (*in the last edition of Sabatier's Surgery*, p. 257. Vol. II.), on the result of this operation. 'Dupuytren's plan is one of the simplest and most practicable that can be devised. If the canula is once brought into the nasal canal, and if it remains there firm, then every after-cure is quite unnecessary; the cicatrization of the external wound takes place in four and twenty hours, when the puncture of the sac has been made with the bistoury; if a fistulous opening previously existed, the cicatrization takes place somewhat later. A great number of the patients operated on scarcely know whether they have a foreign body in the lacrymal passage or not, so slight is the inconvenience produced by it. They all exhibit signs of astonishment when the operation is completed, that so little time has been required to perform it. Several patients, of all ages, and both sexes have been operated on by Dupuytren in this way with the best success. The results of this mode of operating are as follows:—From twenty patients at least sixteen were radically cured, without the slightest displacement of the canula. In the remaining four cases, from various causes, it was necessary to remove the canula. If, after the puncture of the lacrymal sac has been made, the *os unguis* is found laid bare and in a carious state, one ought to wait for the exfoliation of the bone, and keep the wound open by means of charpie brought into it, and after this lay in the canula. If the canal is stopped up, the surgeon must endeavour to remove the obstacle to the side; or if the canal be quite obliterated, or no traces of it existing, as Dupuytren has several times found to be the case, then he makes the perforation of the lacrymal bone, recommended by Wolhouse, Petit, Hunter, Scarpa, and others, and then lays in a peculiarly formed canula, the ends of which are somewhat larger than its centre. The operation of Dupuytren appears to me so well adapted for the cure of the disease, that I am really surprised that it has not met with a more general trial. The canula can effect no cure where there is a polypous state of the mucous membrane of the canal, or where the inferior concha is the cause of the blenorrhœa of the lacrymal sac; in this last case, the drawing through the canal of a silk thread, as recommended by Dr. Schmalz, of Pirna, will be found peculiarly useful. And, lastly, the application of Dupuytren's canula is always contra-indicated, when, on account of a great narrowing of the canal, great force is required.

"*Extirpatio Oculi.*—The extirpation of the eye, which is indicated by the presence of carcinoma or fungus hæmatodes of the organ, is generally performed merely with a simple bistoury; even the division of the optic nerve is also done with the knife. The complaint of the ill success of this operation is in every surgeon's mouth; the disease for which it is performed generally comes again (fungus or cancer) and destroys the patient."

Holbrook's *Case of Hydrocephalus, treated by Puncture* *. —J. K. aged eight months, the child of a farmer, had, from his birth, chronic hydrocephalus, which had swelled his head to an extraordinary size, and the skin of the scalp was nearly burst. There was much emaciation, the eyes were turned down with nothing but the white visible, the child was constantly moaning but his appetite was good, and his bowels regular.

"Under these circumstances, I represented to the parents that the child's life might probably be prolonged by discharging a portion of the fluid, by making a small opening, and healing it again; but if this was not done, it appeared almost certain that the skin would soon give way in the prominent part, and that death must shortly follow. In reply to this opinion, they said it was desirable to prolong the child's life, as much as possible, in the hope that something more favourable might turn out. In accordance with these feelings, I made an opening with a common lancet on the opposite side to the part likely to give way, and discharged about a quart of clear serous fluid, and which appeared to produce but little effect on the child; but the scalp and membranes being flaccid from the discharge of the fluid, left the head a most unpleasant body to handle, from the circumstance of the bones being so widely separated at the sutures, and giving way to pressure in every direction. I closed the wound with a bit of lint and sticking-plaster, and applied a handkerchief, so as to give as much support as possible to the whole head. I did not consider it necessary to prescribe any medicine, but left directions, if any alteration should occur, to inform me immediately. No unpleasant symptoms have, however, occurred; and the same operation has been repeated twice since, discharging each time about a quart, and making in all three quarts. How long life may be prolonged in this way, or what the ultimate result of repeatedly discharging the fluid may be, time only can shew; but this case proves that the operation may be repeatedly performed without any ill effect."

The results of the case are not given, but we shall, no doubt, be informed of them, through the same channel. In the mean time we shall give the results of another case similarly treated by a very intelligent and ingenious Scotch surgeon.

Mr. Sym's (*of Kilmarnock*) *Case of Hydrocephalus treated by Puncture* †. "In April, 1822, I was called to visit an infant of whose case I received the following history:—The midwife had remarked at his birth, that his head was of an uncommonly diminutive size; and during the whole of his life he had been so fretful, that his mother was surprised he should continue to thrive, while he seemed to suffer almost constant uneasiness. He increased in bulk, however, and sucked with sufficient avidity, showing nothing peculiar in his appearance, and no symptoms of disease, till he was about six weeks old. It was then

* Med. Rep. † Edin. Med. and Surg. Journ.

observed that his head had become tumid at the fontanels, and he began to sleep worse than formerly, to take less nourishment, and to decline in his flesh. When I first saw him he was eleven weeks old, and I found his head exceedingly enlarged. Upon placing it in the direct rays of the sun, it was evidently diaphanous down to the temporal muscles, and water might be detected by distinct fluctuation throughout every part of it. There was nothing unhealthy in the appearance of his eyes; and although it was impossible to ascertain the degree of vision enjoyed by so young an infant, still he must have possessed the use of that sense to a certain extent, as he was always most readily appeased during night, by lighting a candle in the room in which he lay.

"I prescribed small blisters, and a gentle course of calomel, as much with the view of fulfilling the ordinary routine of practice, as from any feasible hopes of removing so large an accumulation of water by absorption. This course was persevered in for a fortnight, when the integuments covering the wide interstices between the bones, became so tense and thin, that I apprehended sloughing. His pulse had become extremely small and rapid, his cry feeble, his body emaciated, and he rejected the breast.

"I now scratched an opening with a lancet in the posterior fontanel, and six ounces of salt-tasted serum flowed from it, leaving the head so flaccid, that it was found difficult by means of lint and a bandage, to approximate the bones to a globular form. The child did not appear to suffer any inconvenience from the sudden removal of the fluid. He revived after the operation, slept well the succeeding night, sucked more greedily next day than he had done for several weeks previously, and his pulse became both fuller and slower. It was not long, however, till the water had again perceptibly accumulated, and he began to manifest the same distressing symptoms which had existed before the operation. These were again alleviated by removing the water, which was now done by a small trocar and canula, and in the course of three months, during which the child was under my care, this was repeated five times, and thirty-six ounces of water withdrawn. The relief afforded by this operation was so obvious, that I was generally urged by his parents to perform it earlier than I felt disposed to do. At length the water ceased to accumulate, about a fortnight after the last tapping; and within a week of the child's death, so much of it had been absorbed, that the scalp fell in between the parietal bones, forming a deep furrow. The secretion of urine was very remarkably diminished during this stage of the disease. The child was six months old when he died.

Dissection.—"The dura mater adhered firmly to the bones of the cranium; and the thickened arachnoid membrane formed a large sac, containing 2½ lib. of limpid serum, and partially divided into two chambers by the falx. The cerebellum and pons varolii were of the natural size and appearance, as were also all the nerves which originate within

the cranium; but in place of the cerebrum there was only a small, firm, flat mass, not larger than a garden bean, lying over the tunica. It was so much compressed, that it was quite impossible to recognize in it any parts corresponding to the structure of a healthy brain."

Mr. WALLER'S *Cases of Transfusion of Blood**.—Surgery is now endeavouring, by rapid strides, to encroach upon the province of what has hitherto been chiefly confined to physicians' prescriptions. We have just seen two cases of hydrocephalus treated surgically, and here we have two other cases of exhaustion, in which the bold attempt was made to support the sinking system by fresh blood from a person in health. We formerly mentioned the ingenious experiments of Dr. Blundel in the same field of bold practice, and we must give our unqualified approbation to the judicious views which Mr. Waller has brought forward in his little pamphlet; which are accompanied by a brief history of former trials of transfusion. As the subject is important, we shall give the two new cases mentioned in Mr. Waller's own words:—

"That the venous blood of a man may with impunity be injected, by means of a syringe, into the veins of a woman, apparently sinking from hæmorrhage, has of late been demonstrated, as far as two cases can be said to do this. The females were both patients of the City of London and Southwark Midwifery Institution; one occurring in my own district, the other in that of my friend and colleague, Mr. Doubleday. I was summoned to the first case on the 8th of August, 1825, about half an hour after delivery, and was told, that on the expulsion of the placenta an alarming hæmorrhage had supervened. The patient was below the middle stature, aged 21, of a very delicate and scrofulous habit, and one very ill calculated to bear the loss of blood. She appeared at first sight to be dead, there was not the slightest tinge of redness on her cheeks, or on her lips, which were of a leaden hue; she had that peculiar cast of countenance, which Dr. Blundell emphatically calls 'death in the face,' but which it is impossible to describe upon paper. There was no apparent respiration for some seconds, and the powers of deglutition were suspended. The pulse at times was slightly perceptible, at others it could not be felt. There was still some little draining from the uterus, I therefore continued the cold applications to the belly, which had before been had recourse to, and applied warmth to her feet, which were very cold. She soon so far revived as to be able to swallow, and then brandy and carbonate of ammonia were liberally given. These measures were vigorously persevered in for the space of an hour and a half, with only temporary benefit; for although the pulse rose a little after each exhibition of the stimulus, it soon fell again. Under these circumstances it appeared to me, that the only resource left was

* Observations on the Transfusion of Blood, &c., by C. Waller, M.R.C.—pp. 34. 8vo.

the operation of Transfusion. As she was now getting generally cold, and the drain had nearly ceased, I wrapped her up in blankets, and desiring the stimuli to be persisted in, proceeded to Dr. Blundell, to request his advice and assistance, which he had previously very kindly offered me in case of an emergency of this kind. In a little more than an hour we returned; and as I at this time thought the pulse rather more perceptible, we agreed to have every thing ready for the operation, but to defer it for the present. After waiting at the patient's bedside for about an hour and a half, we were all agreed that she had not lost ground, and for the last hour we thought her pulse beat with rather more regularity, (the stimulus had been repeated at intervals during this period.) Dr. Blundell and myself then left her for an hour, and when we returned again it was very evident that she was worse; her pulse was lower, and she was still lying in that alarming state of faintness, that we considered the presumption against her surviving to be so strong, that we should not be justified in leaving her without making the attempt to save her life by the operation of transfusion. On bringing her to the edge of the bed she vomited. Her pulse was now 120, weak and fluttering. I cannot tell exactly what quantity of brandy she had taken, but should suppose from twenty to thirty ounces.

"The operation was exceedingly simple, and was performed in the following manner:—A vein at the bend of the arm was laid bare for about an inch and a half, and an opening, of sufficient extent to admit the beak of the syringe, made into it. A little blood oozed from this orifice, in order to restrain which, a blunt needle was passed under the vessel a little lower down. As in these cases patients have not a drop of blood to spare, it will be found advisable in future operations of this kind, not to open the vein till after it has been done. The syringe was made of brass, well tinned on the inside, and contained two ounces.

"The husband having agreed to furnish the blood, was now called in, and placed near the bed. A vein in his arm was opened, and the blood allowed to flow into a common glass tumbler. From this it was immediately absorbed into the syringe, even whilst it was flowing, care being taken that a sufficient quantity should remain at the bottom of the glass to prevent the admission of air. The more effectually however to guard against the introduction of air into the vein, when the syringe was full, its nozzle was placed perpendicularly upwards, and the piston gently pressed, till we could see the blood issuing from its point. The blood was then cautiously injected in a direction towards the heart. No very obvious effect appeared to be produced by the first injection. After waiting a minute it was repeated, and towards the end of this injection, there was an approach to syncope, the pulse became somewhat irregular; there was sighing, with efforts to vomit, though nothing was ejected, and there was slight restlessness; these symptoms ceased spontaneously in the course of a minute or two. In the present limited state of our experience, it was difficult to decide whether these symptoms were caused by the injection, or whether they were the effect of the previous hemorrhage; but as great caution is required in conducting the opera-

tion, as the patient expressed herself comfortable, and as her pulse, though still feeble, had fallen to 110, we agreed that it would be more prudent to stop the operation, conceiving that the quantity of blood injected (four ounces) though small, was sufficient to turn the scale in her favour, as far as her life was concerned. When seen about six hours afterwards, she was found in a comfortable state, her pulse 100 and broad, complains of no pain, but said she was excessively hungry. Light and unstimulating nourishment was liberally allowed her, and although she remained weak and low for three or four days, she eventually recovered without a single unpleasant symptom. There was but little secretion of milk; and at the expiration of forty-eight hours not having passed any urine, I thought it best to introduce a catheter, (although she said she felt no inconvenience,) and drew away about twenty-four ounces only. It was not till after the lapse of many days that the wound was healed, as there was no attempt at union by adhesion.

"The other case, which occurred to my friend Mr. Doubleday, was that of a robust Irishwoman, who had lost a large quantity of blood from an adhesion of the placenta; before and during the extraction of which so much blood had been lost, that although the uterus was well contracted, she was lying in that alarming state of syncope, that Mr. Doubleday feared dissolution would speedily ensue. He could not feel the pulse at the wrist, the countenance was exsanguineous, the lips pale, nostrils pinched, sight indistinct, excessive restlessness, breathing hurried, accompanied with frequent sighing; the body was covered with a cold clammy perspiration. Mr. D. gave her about six ounces of brandy, after which the pulse became just distinguishable; the brandy was given at short intervals, with carbonate of ammonia. Laudanum was also given, with the view of allaying the extreme restlessness. These means were tried for about half an hour, but their influence was very transitory. The pulse, when perceptible, was very rapid. Mr. Doubleday being now of opinion that nothing short of the operation of transfusion would save his patient, left her in the care of the gentleman who was previously in attendance, and proceeded to Dr. Blundell, who accompanied him to the patient's house.

"The woman was still in the same state, and it was the united opinion of Dr. B. and Mr. D., after deliberately investigating the different circumstances of the case, viz. the state of the pulse, the aspect of the countenance, and the quantity of blood lost, that the chance of her recovery was so slight, that it would not be right to neglect the trial of the operation of transfusion, which was begun in the usual manner; but the patient made so much resistance, that they abandoned the operation for the time, not, however, expecting her ultimate recovery. The brandy was continued at intervals, in addition to which, she was ordered to take liberally of beef tea and gruel; she also had two or three eggs beat up with a little brandy.

"Notwithstanding these measures, however, she grew worse, and about half-past two p.m. (about five hours after the operation had been attempted) Mr. Doubleday received a message, stating that she would

most probably be dead before he could arrive at the house. He went immediately, and found the woman all but dead, in fact, the husband said she *was* dead. Mr. D. immediately proceeded with the operation. The syringe was the same that was used in the former case; at the end of the first injection, the pulse was more perceptible; the second it was broader; at the third, (when six ounces were injected) a very marked improvement in the condition of the patient was observed, she herself stating, that "she was as strong as a bull;" at the fourth she said, "she felt the blood running up her veins;" and also stated, that she was "quite recovered."

"Mr. D. here hesitated, whether or not he should stop the operation, but as there was no unfavourable symptom, and as the patient had improved upon every additional syringe-full, he determined to proceed, and accordingly three more injections were employed, making in the whole fourteen ounces; she now complained of pain over the left eye, and therefore Mr. D. very judiciously discontinued the operation; the pulse was now one of very considerable power. The pulse, which, before the operation, when it could be numbered, was 140, was now down to 104; a quarter of an hour afterwards it was 98; one hour and a half 90; it was strong, soft, and full, but somewhat irregular, and continued so for two hours. About an hour after the operation she sat up and assisted her nurse in undressing and making herself comfortable, and seemed as well as women usually are when nothing particular has occurred.

"Three hours after the operation, her pulse was 94, strong and full, skin hot, tongue furred, considerable thirst, some uterine pain, bowels constipated. A purgative enema was now injected. In two hours she was again visited; she had slept a little, the enema had operated twice; pulse 120, skin perspiring, tongue moist; has had no nourishment since the operation; as she was restless, and complained of pain in the hypogastrium, sixty drops of tinct. opii were given, which procured her sleep, and brought on a copious perspiration. Three hours afterwards she took an aperient. She passed a comfortable night, but her bowels being confined, the aperient was repeated next day.

"Some slight inconvenience was experienced, in consequence of a little inflammation of the vein, which was, however, subdued by leeches, fomentations, and poultices. With this exception she went on well; the secretion of milk was so copious as to be troublesome. The seventh day after the operation, she got up to prepare her husband's breakfast, and attended to her household affairs; by which means she reproduced slight inflammation of the vein, but it gradually subsided.

"From these cases I conceive we have a right to draw the following inferences:—

"1st, That the operation of transfusion is not necessarily followed by those dangerous effects which were formerly attributed to it by Heister, whose opinion has been cited in the present day, as an argument against it.

"2d, That taking into consideration the difference in the size and in the constitution of the patients, it is very reasonable to presume, that the four ounces of blood injected into the veins of the first patient,

were equivalent to six ounces in the latter, and that the rally was not so immediate and decisive in the former, on account of her naturally weak and languid habit.

"3d, That we have a right to conclude, that the improvement in the condition of the patients was owing to the injection of blood, and not the effect of the previous remedies, because, although they appeared to revive a little after each exhibition of the stimulus, yet in a very few seconds they relapsed again; whilst, on the contrary, after the injection of the blood, there was no relapse in either case, and in the latter the recovery was instantaneous and complete. This perfect and sudden recovery was often witnessed by Dr. Blundell in his experiments on the dog.

"4th, That the symptoms of syncope which were observed in the first patient were accidental, for not the slightest appearance of it was observed in the second.

"5th, That the inflammation of the vein is not a constant occurrence, for there was none in the former case, and we may presume, that it is not a common one, inasmuch as no mention is made of its occurring in the old operations which have been above related.

"6th, That the blood injected did not merely act as a stimulus to the heart, but that it was really applied to the nourishment of the system, for in the latter case, no food was introduced into the stomach for more than ten hours after the operation, prior to which the patient had vomited up all that she had taken."

A number of frivolous objections have been made to the operation which it is scarcely worth while to notice. It has been stated, that no woman would die from hemorrhage, if a proper supply of light nourishment was promptly administered; but even supposing it were retained on the stomach, (which it frequently is not,) is it reasonable to expect that the process of assimilation can proceed with such rapidity as in any degree to compensate for the large quantity of blood lost in these cases?

Again it has been stated, that this operation is totally unnecessary, for the very act of uterine hemorrhage is its own cure. According to this notion, it is only necessary to allow your patient to bleed till she gets cool, and then the hemorrhage ceases as a matter of course. This fanciful hypothesis is sufficiently answered by the well known fact, that women now and then die from these bleedings, which they ought not to do if this idea were correct.

But it is not necessary to pursue these theoretical objections any farther, for I trust sufficient has been said to call the serious attention of the profession to the subject: for if by repeated trials it should be proved that the transfusion of blood is a safe operation, there are many cases besides those of uterine hemorrhage in which we may expect it to be useful.

*Century of Surgeons on Gonorrhœa and Stricture**.—This is

* A Century of Surgeons on Gonorrhœa and Stricture of the Urethra; "Multum in Parvo. pp. 190. London, 1825.

understood to be the production of the celebrated Dr. Kitchener, and to be a portion of a great work on the Venereal, which he is at present *cooking* for the profession—this brochure being sent as a pilot balloon to ascertain how the wind (the *aura incerta populi*) is likely to blow. The price of the thing is quite unconscionable—7s. for a half-crown book, and our professional readers need scarcely be told that it is more distinguished for gossip and scrap reading, than for information on gonorrhœa and stricture.

Mr. A. C. Hutchinson's *Case of the High Operation of Lithotomy**.—Mr. C—. aged 20, the son of an officer of Sheerness dock-yard, had laboured under symptoms of stone in the bladder from his earliest infancy; and to such a degree, that he never had been able to retain his urine for more than half an hour during this period, by day or by night. At times, also, the pains were so severe, and the difficulty of passing his urine so great, that life had, in a manner, become a burden to him. Before the act of micturition could be effected in childhood, it was sometimes necessary, we are told, to place the boy on his head.

"Under these circumstances, in May last, he consulted Mr. Hutchinson; who, upon *sounding*, discovered a stone in the bladder, which he determined to remove by the high operation—induced thereto, by the consideration that the stone was probably very large, and nearly filled the bladder, which never had been fully distended by urine. In consequence of this determination the patient was placed upon low diet for a month, during which period his bowels were frequently acted on by purgative medicines, and the *staff* frequently introduced, so as to accustom the bladder to its presence. These precautions taken, the operation was performed by Mr. Hutchinson, on the 18th June, in the presence of several professional friends, and in the following manner:—

"The patient being placed upon a table of the ordinary height, with a mattras under him, the pelvis raised considerably higher than the shoulders, and the feet resting on chairs; the operator standing on his right side, made an incision in the line of the linea alba, through the integuments, and nearly four inches in length from the pubes. This incision was then carried deeper towards the bladder, and between the pyramidal muscles, so as to make an opening through the linea alba of about three inches in length. This tense membranous band (the linea alba), and some fibres of the pyramidal muscles were then divided *transversely* at the symphysis pubis, so as to afford a more free and convenient access to the bladder; which was now clearly seen,

* Medical Repository.

at the bottom of this deep wound, very much contracted, and covered with fat.

"The handle of a silver staff, previously introduced into the bladder, was now depressed, so as to raise the anterior part of the fundus of this viscus towards the external wound; when it was pierced with a straight, sharp-pointed bistoury, which was received into a groove in the concave part of the staff. An opening into the bladder was thus made, sufficiently large to admit the fore finger, for the purpose of ascertaining the probable size of the calculus; which done, this opening was enlarged accordingly towards the cervix. Notwithstanding the freedom of the incisions, some difficulty was now met with in attempting to extract the stone, which was so firmly grasped by the bladder, or so impacted in its situation, as to create a momentary apprehension of adhesion having taken place. By introducing a finger, however, into the rectum, the stone was turned and dislodged; and was then easily, as it appears, extracted, by means of the finger and thumb.

"After the operation the wound was dressed with slips of lint, dipped in oil, with slips of adhesive plaster, and with a flannel roller, passed three or four times round the body. A gum-elastic catheter also was introduced into the bladder, and an opiate administered.

"The night was passed easily; but the following day some febrile symptoms arose, which yielded, however, readily to one free bleeding, and other common remedies. After this, no unpleasant symptoms of any kind occurred, and the wound gradually closed until the 31st July, (the 44th day,) when it was completely healed, and the urine passed in a full stream through the urethra.

"Thus terminated this successful case; and the patient's recovery, Mr. Hutchinson adds, he is strongly inclined to believe, would have been still more speedy, had the catheter been sooner withdrawn from the bladder—an opinion in which we are strongly inclined to concur: for this instrument appears to have been almost constantly retained in the bladder for about three weeks, where, during this period, it must, in a greater or in a less degree, have proved a source of continual irritation.

"The stone weighed eleven drachms, two scruples, and four grains. It was two inches long, and one inch and a half in width, and consisted principally of the lithate of ammonia, mixed with some oxalate of lime (and probably, a little carbonate of lime) of the phosphates, (of lime, magnesia, and ammonia?) and some animal matter.

"The exterior laminæ, it may be observed, were composed

chiefly of the mixed phosphates, (that is, as we are partly given to understand, of the phosphate of lime, magnesia, and ammonia;) but two or three small fragments, detached from the surface, were found to consist chiefly of the simple phosphate of lime—a circumstance which seems to have particularly attracted Dr. Prout's attention, as he never before had known, he says, of this salt being deposited from the urine alone; and hence had been led to believe, that calculi composed entirely of it were not of urinary origin, but formed in a manner analogous to those met with in the prostate gland."

M. Janson's *Case of removing a large portion of the Scapula.**—A female, employed in the manufactory of silk, aged 43, began, in 1819, to perceive a tumour in the posterior and middle portion of her shoulder-blade: it was immoveable, painful to thetouch, and appeared fixed to the bone. In 1824, this tumour had acquired the size of a child's head, was hard, wrinkled, and had occupied all the bone, excepting its inferior border and the supra spinal fossa, and had extended itself to the highest part of the axilla, with an elongated and voluminous pedicle. It was moveable in all directions, and carried the arm with it in all the motions given to it. The portion of this swelling which was situated in the axilla, obliged the patient constantly to keep his arm elevated, and at a right angle with the trunk of the body. Violent pains, darting from the shoulder along the arm, were felt in the breast. At length, from want of sleep and indigestion, the patient had become emaciated, and was evidently sinking.

On the 4th of October, M. Janson attempted the removal of the tumour. He included it within two semi-elliptical incisions: dissected the edges of the wound, so as to preserve as much skin as possible, and detached the tumour in every direction; then raising it, and the tumour breaking in the centre throughout its whole thickness, he removed the greatest part; cutting the attachment of the trapezius, of the supra and infra spinatus muscles, he discovered that all that portion of the scapula situated above its spine was in a healthy condition; and separating by the saw the diseased part of the bone, he thus preserved the articulation of the arm. Finally, laying bare that portion of the tumour situated in the axilla, by an oblique incision from below upwards, he dissected it, and drew it upwards carefully; the cellular tissue which fixed it to the arm gave way, and he succeeded in removing it entirely. All the vessels were then tied; the axilla properly supported by a plug; and the edges of the wound, which was six inches across and nine in length, were brought together with sticking-plaster.

For a few days the success of the operation was doubtful, from causes affecting the general health; but these were calmed, and the patient quitted the hospital at the end of two months, nearly cured.—

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* Archives Generales.

On the 15th of March, it was entirely healed, and the motions of the limb were becoming daily more free.

Mr. Sleigh's *Science of Surgery**.—We had formerly occasion to notice, with approbation, a work of Mr. Sleigh's, on a new method of performing the recto-vesical operation of lithotomy. In the present work he has entered upon a much wider field, embracing the whole science of Pathology, medical and surgical. He has proposed to arrange his matter under three heads:—1. *Nosocoilia*, 2. Debility, and 3. Inflammation. By the first term (which is extremely objectionable as a new coined term, of no utility) he means the disorders of the organs of digestion. Surely the student has enough to learn without puzzling his memory with words like *nosocoilia*, and we think Mr. Sleigh might have been more profitably employed than in searching his Greek Lexicon for ores to amalgamate into a heterogeneous new term. The work itself contains a great deal of useful fact and illustration, and is likely to prove useful to those for whose perusal it is intended. There is, however, much want of order throughout, and the style, though usually intelligible is crude, unpolished, and unscholar-like. We can scarcely conceive why Mr. Sleigh, who is so bold a reformer, and fond of originality, should quote so largely from Dr. Thomas's Practice of Physic, a book that every body knows to be a mass of inconsistencies, and extremely deficient in correctness.

Mr. Turner *on the Arterial System, as connected with Aneurism and Hæmorrhage*†.—This, we believe, is no less than the third publication of Mr. Turner's within a short period, and is very creditable to his industry and talents. As we have not much room here to examine the work in detail, we shall probably give an analysis of it in next Number.

VI. PRACTICE OF PHYSIC.

Dr. Balber *on the Treatment of Hydrophobia*‡.—The following paper, we think, merits attention in the present state of our knowledge on this dreadful complaint: the first step towards

* The Science of Surgery, or the Principles of Pathology made the basis of Medical and Surgical Practice, &c. By W.W. Sleigh, Esq. Lecturer on Anatomy, &c. London, pp. 319. 8vo.

† A Practical Treatise on the Arterial System, &c. [with original coloured plates.] By Thomas Turner, M.R.C. &c. pp. 194. 8vo. London and Manchester.

‡ Hecker's Annalen der gesammten Heilkunde.

improvement being always most surely laid on a knowledge of our ignorance.

"On the perusal of the mode of treatment adopted by Wendt in Breslau, for the prevention of hydrophobia after the bite of a mad dog, I was particularly struck with the similarity of the treatment adopted in Breslau and Zurich, and a singular coincidence of their results. They have been both tried during a long series of years, and are now made known, for the first time after their efficacy has been ascertained in hundreds of cases. If a priority of age has any thing to do with them, the Zurich treatment is undoubtedly entitled to it, since it was introduced in the year 1783, whilst that in Breslau has been adopted only since 1797. Who is the real suggester of this treatment, is not now with certainty known; most probably it was Dr. C.J. Hirzel, sen., the archiater and physician of the Zurich hospital at that time. The treatment is as follows:—Deep scarifications of the wound, besmearing it with the pulvis lyttæ, application of a blister in the neighbourhood of the part, keeping up of suppuration, both in the blistered and wounded part, during six weeks, and the rubbing in of mercurial ointment till symptoms of approaching salivation come on. Internally, the adults take, for three weeks in succession, every morning, and after that period, for some time longer, every other morning, fasting, a powder, composed of five grains of powdered belladonna; for which, when no trace of salivation shews itself, or if the patients come under treatment only a few days after the receipt of the wound, calomel should be substituted, or be given from the very commencement. The object of giving these moderately large doses of belladonna is, that the patient should from each dose have the symptoms of incipient intoxication, at least dryness of the throat, glimmering or haziness before the eyes, vertigo, and afterwards perspiration. Then a diaphoretic mixture of liquor ammoniæ acetatis and succinat. with copious potions of tea, is ordered for the patient, and a diaphoretic regimen recommended. He must remain in bed the four first weeks after the accident, and receive no animal food. "I lay," (says Dr. Rahn, one of the physicians to the hospital), "a great deal, and indeed by far the greatest stress on the external treatment; but still I think that we could not safely rely on the external alone; but internal means must be given at the same time, and regularly continued, as we do not know how rapidly a part of the poison brought into the wound may be absorbed, and which can only be destroyed by the action of internal remedies." If the clothes are also bitten through, they are always burnt.

According to this mode, there have been treated, in the 42 years since it has been in use (from 1783 to 1824 inclusive), 233 persons who have been bitten, viz. 182 from dogs, 50 from cats and foxes, and 1 by a *martin* (mustela). In the ten years from 1783 to 1792, there were treated 13 persons who were bitten by dogs supposed to be mad, and 18 by dogs of whose madness there was not the least doubt (it is certainly not stated by what means the madness of the dogs was proved), by a cat supposed to be mad, 1, and by mad cats 5; making in the

whole 47. From 1793 to 1802, by dogs suspected to be mad, 14, by dogs absolutely mad 20 (all these in the years 1793, 1794, 1796, and 1797), by a cat suspected to be mad 1, and 6 by cats in a state of real madness, making altogether 31. From 1803, no particular mention was made in the books between dogs which were only suspected to be mad, and those which were really in a state of madness. From 1803 to 1812, bitten by different beasts, there were admitted 67; and from 1813 to 1824 (inclusive), there were admitted 78 bitten persons; and from these, 36 were bitten in the years 1820 and 1823 by mad dogs. From these 233 bitten persons, many were admitted on the second, third, fifth, sixth, seventh, tenth, and fourteenth day, and even five and eight weeks after the wound had been received. From the whole, 4 only died, 2 in 1784 and 1791, on the second day after their admission, and consequently scarcely submitted to the influence of the treatment. Of the other 2, one, a woman, was bitten on the inner and outer side of the mouth, and the other a child, on the eyelid, so that the prescribed means could not be employed with the requisite and usual exactness.

"So much for the treatment, and the results with which it has been attended. We see, however, three important remedies recommended, in conjunction with each other, for the preventiou of hydrophobia. The question is whether it is necessary that these three medicines should be joined together; or can any one of them be employed singly with safety? Before I proceed to answer these questions, I beg to be allowed briefly to state some other modes of treatment, very similar to that employed at Zurich, and then to compare their results, in order that I may found my answers upon them. The mode of treatment recommended by Wendt (vide Rev.) in his work is as follows:—filling of the wound with *pulvis lyttæ*, and the keeping up of a copious discharge for six weeks; besides this, rubbing in of mercurial ointment, and the giving of calomel internally for six weeks, so that a severe salivation be kept up. Of 106 which were bitten by mad dogs between 1810 and 1823, two only died. There were 78 persons besides these treated; but the animals were proved not to be mad, and consequently the treatment was modified. In the *Beobachtungen und Abhandl. aus die Heilkunde, (Bd. I.)* conducted by some Austrian physicians, the senior surgeon of the large hospital at Vienna, T. M. Axter, has published an account of the treatment pursued by him in cases of bites from animals during the last 27 years; and during the whole period of that time, not a single old patient was ever brought back to the hospital with hydrophobia. During three or six days in succession, he gives internally a grain of *pulvis lyttæ*, with six grains of *canc. ocul.* and sugar; externally, over the wound, a blister was applied, and then it was dressed with the *pulvis lyttæ*, or washed with some stimulating lotion during the space of six weeks. I regret that I have only been able to see a short extract of Dr. Axter's accounti n the *Salzburger Zeitung*, (1820, B. I. p. 23.), where more minute particulars are not to be found. Dr. Hausbrand, district physician at Braimsberg, has given in Hufeland's

Journal, for 1821, (part II. p. 21.), the following treatment:—first active blood-letting, (this is only to be pursued, however, when the patient applies soon after the accident) deep scarifications of the wound, promotion of the bleeding, washing of the wound with salt and water, and the application of an ointment composed of unguentum basilicum and powdered cantharides, or a large blister over the wound, and keeping up of the suppuration during the space of three months at least. Internally, the patients were to take, for three evenings, a powder composed of camphor and opium, drink elder tea, and keep up a copious perspiration. There are only eleven cases given by Dr. H. of persons who were bitten by dogs absolutely mad, and treated in this manner by him; but they all recovered.

On looking at these four different prophylactic modes of treatment, we perceive that, as to the external treatment, it is essentially the same, but that the internal differs in each; but, still, they have been all attended with the same fortunate results. In Breslau, the patients were kept in a state of salivation for six weeks; of more than 100 patients, only two died; and the wounds of these persons were so situated, that the local means could not be applied with the same effect as in the other cases. In Zurich, the patients are never brought into a state of complete salivation; the belladonna is continued six weeks without intermission, and the patient is kept in a state of perspiration. Of more than 100 patients (I will allow that only half of the 233 were bitten by mad animals) only two died; and the wounds of these persons were in such a situation, that they could not be properly treated. Dr. Hausbrand gives neither quicksilver nor belladonna, but certainly keeps up perspiration, during the three or four first days, by opium and camphor; and has, hitherto, not lost a case. Mr. Axter gives nothing to his patients with the exception of a grain of cantharides, during a few days after their reception into the house; and he has also been eqnally successful in his treatment. From these facts the following conclusions may be drawn:—1. Neither quicksilver, nor belladonna, nor diaphoretics, are of themselves able to prevent the occurrence of hydrophobia. 2. If one be not warranted in saying the same of cantharides, still its internal use may be dispensed with. 3. The local treatment is the only sure and certain preventive against the recurrence of the complaint. If, after these four different modes have now been generally made known, we should still hear of persons dying after the bite of mad dogs, it will certainly be a matter of astonishment; and the fault will either be in the patient's not applying for relief in proper time, or in the physician for being ignorant of these valuable but simple modes, and trying other plans of treatment less sanctioned by the list of experience.

Dr. Morgan *on the Treatment of Headache**.—In a very elaborate paper on headache, which does not possess so much novelty, as it combines into one view all that is known on the subject.—Dr. Morgan gives the following methods of treatment

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for his three classes of headache, viz. the plethoric, the organic, and the sympathetic.

Treatment of the First Class.—In the cure of headaches, every variety of remedy and treatment has at different times been employed, and the same method has been adopted in very opposite states of the disease, and has been attended, as might be expected, with very different results. The first class, which depends on plethora, the consequence either of a *general* fulness of the system, of increased vascular action through the general system, or in the blood-vessels of the head only, the remedies seem apparent and obvious; a free use of the lancet, cupping glasses and leeches, blisters, purgatives, low diet, digitalis, tartar emetic, and antimonial powder in large repeated doses;—cold applications to the head, setons and issues in the nape of the neck, and the mineral acids, appear sufficiently numerous, and certainly are not an inefficient class of remedies, and if employed with judicious and persevering vigour, will be ordinarily attended with a successful result. But when the headache depends on plethora in the head, unconnected with any fulness of the general system, or exists in combination with a defect of blood, and likewise of vigour in its circulation in the other parts of the body (particularly the lower extremities, as is indicated by their paleness and coldness), the difficulty of managing matters is greatly enhanced, more especially as respects the permanency of the relief. When the headache is accompanied with throbbing of the carotid and temporal arteries, and some tendency to delirium and convulsive spasm, a small quantity of blood should be taken away by leeches applied to the temples, or by cupping glasses to the nape of the neck, or by opening the temporal artery. It ought, however, to be resorted to, only when fears are reasonably entertained for the brain, lest inflammation or effusion should take place; because we thereby tend still further to disturb the balance of the circulation, by augmenting its languor in the general system and lower extremities, without correcting the local determination, the relief to the head by the detraction of blood being seldom more than temporary. In such cases, during a paroxysm, the following method may be substituted, or at least tried in the first instance:—Let the feet and legs be immersed, and kept for some time in water as hot as can be endured, at the same time let a constant stream of the coldest water be poured on the crown of the head, having a basin held under the chin to receive it, for ten minutes or more, according to its effect. Dr. Abercrombie states, that he has seen men in furious delirium, who required four or five persons to restrain them, quickly subdued by this pouring of cold water only on the head. So powerful does he regard it, that in his excellent paper on Inflammation of the Brain, he has, with considerable confidence, proposed it as a remedy in that active and dangerous disease. It is equally well adapted where the headache is connected with general plethora and increased vascular action. After the use of the pediluvium and cold affusion, should the symptoms still persist, or be only partially removed, I conceive a gentle emetic of ipecacuanha or antimonial wine would be administered with the best effect—to effect a more equable

circulation, this intention will be promoted if the foot-bath be used at the same time.

"A trial of Dr. Parry's method may likewise be made, as a temporary expedient, viz. to make pressure on the external carotid. He states that delirium and convulsion subsided, while the pressure was continued. I cannot, however, place so much confidence in this, as in the former remedy, of which I am induced to think very highly, and I do conceive it will be found to be a remedy of great energy in restraining vascular distention and activity in the head; not during the paroxysm of headache only, but at other times, viz. daily or even more frequently; and thus by increasing the tone of the arteries of the head, become one of the most efficient means of removing the tendency to local plethora in the head. The next remedy is the continued use of small doses of some stimulating purgative, which, by griping and exciting the bowels, occasions a derivation of the blood to the abdominal viscera, thus creating a diversion in favour of the brain. For this purpose, the Barbadoes aloes, the resin of jalap, scammony, the compound extract of colocynth, combined with some aromatic, are appropriate, and a five grain pill should be taken at bed-time, or an hour after dinner, daily.

"By presenting a continual stimulus to the stomach and bowels, the energy of the brain, from sympathy with these parts, is roused, and the arteries of the brain have their irritability increased, and consequently the tendency to accumulation of blood in them diminished. The use of sulphuric and muriatic acids in small doses, in an infusion of cascarilla or cinchona in the morning, has also a beneficial effect in restraining the increased local action of arteries, particularly in the brain. The diet should be light, nutritive, and stimulant, but sparing in quantity; and also the moderate use of wine and porter, when they do not disagree with the stomach. The clothing, particularly of the lower extremities and feet, should be warm; and what is of the greatest consequence to the comfort of the patient, and towards correcting the tendency to congestion in the vessels of the head, is carefully to avoid wetting the feet, or suffering them to remain in damp shoes or cold, any length of time. Errors of this kind will, if persisted in, obstruct or entirrly defeat the best directed medical efforts. When organic diseases of the heart or the aorta originate and perpetuate the irregular determination of blood to the head, low diet, blisters over the heart, digitalis, and other remedies appropriate to that individual disease, must be had recourse to.

"*Second Class.*—When the seat of the pain is fixed in the integuments of the skull, particularly the pericranium, the symptoms are generally severe, and occasionally the pain is almost intolerable. The nature of the disease seems clearly to consist in chronic inflammation, followed by effusion of a gelatinous matter, which concretes and becomes vascular, uniting itself to the pericranium, which is thereby morbidly thickened. This is generally confined to some one part, which, on accurate examination, will be found somewhat elevated. The treatment may be attempted in the first instance by shaving the head and blistering the part

repeatedly; if this should not succeed in removing the affection, an ointment, composed of equal parts of strong mercurial and tartarized antimony ointments, may be used, being freely rubbed into the parts till an abundant crop of pustules appear; and when these disappear, if the affection be found still to continue, another inunction may be used; and if no material improvement follow, a free incision must be made down to the skull, and the wound kept open by pledgets of lint to promote suppuration. As this affection, in its chronic form, is frequently connected with disease of the skull, immediately underneath, a careful examination should be made, and the bone, if carious, is to be removed by promoting its exfoliation, as was done by Sir E. Home, by touching the bone with a dilute mineral acid; or its removal may be affected by the saw, as thus an opportunity will be afforded of examining the state of the dura mater, which, in the severe cases, it will be remarked, was found covered with purulent and sanious matter; for the removal of which, a free opening will be thus made, without which, it were impossible to look for the removal of the bad symptoms that attend these affections. This treatment is adopted to the chronic form of the disease, in which it commonly comes under the observation of medical men. In its active form, general and large blood-letting, active purging, leeches and cupping, are appropriate, or incision down to the bone, afterwards promoting suppuration by lint and other stimulants.

"With respect to the management of the excrescences of the skull, more difficulty presents itself. The removal of tumours and excrescences is a bold measure, and an experiment which few practitioners would be disposed to hazard, and to which still fewer patients would be found to submit; yet, when so situated, that danger from wounding any of the sinuses, or large vessels of the dura mater, is *not* to be apprehended, and when the symptoms are so urgent, that life is become a burden, their removal is not an unjustifiable experiment. The case I have related from Dr. Sporing, of Sweden, the removal of the bony tumour, near the orbit of the eye, by caustic applications, was followed by exfoliation and complete relief of the distressing symptoms. When the headaches arise from tumours which are of a venereal character, and well founded suspicion exists that the virus is not entirely destroyed, I I have found very minute quantities of the oxymuriate of mercury, in decoctions of sarsaparilla and tincture of guaiacum, with the hot bath twice a week, the most effectual remedies; far preferable to a severe long continued salivation, which is commonly resorted to in similar circumstances; the constitution, which is mostly, in those circumstances, very much debilitated, and permanently injured, bears salivation very ill; sometimes, however, it may be indispensible.

"We are now come to the treatment of a very hopeless class of affections, viz. the headaches which depend upon permanent morbid alterations of structure in the brain and membranes. Their removal is placed beyond the reach of the surgeon's knife, and, I fear, beyond the skill of the physician, and, with one or two exceptions, admit only of palliation. This consists in light and spare diet, avoiding all intoxicating liquors,

agitation of mind, passion and quick exercise, with occasional detraction of blood, proportioned in quantity to the severity of the symptoms, mild unirritating purgatives, as castor oil and neutral salts, setons or issues in the neck, digitalis, and small doses of tartarized antimony, and of muriatic and sulphuric acids, when any tonic is requisite on account of the irritability which so frequently distresses the stomach in these affections.

"When the pain in the head is suspected to be owing to effusion between the membranes, or into the ventricles of the brain, perhaps some hopes of relief may be afforded by a gentle salivation, or mercurializing of the system, accompanied with the use of active diuretics. The following form I have found a convenient and efficient mode of administering these medicines :—Equal parts of calomel, digitalis, squills, and ginger, a grain of each to form a pill, and one or more may be taken according to the effect produced, which will be found greatly enhanced if followed by a diuretic draught. A derivation will thus be made from the head, and a truce afforded to the exhalents of the brain, affording at least an interval for the fluid already effused to be absorbed; a process, however, there is reason to believe, that takes place very slowly. This, with blisters and caustic issues to the neck, is perhaps the most appropriate treatment.

"*Third Class.*—The treatment of those headaches which arise from sympathy with other parts of the body, is to be directed, not to the head itself, although the seat of the pain, but primarily to the stomach, intestines, liver, spleen, or other viscus which may be the source of the affection. It is not, however, to be inferred from this, that no disease of the brain and nerves exists; on the contrary, there is reason to think, that where bilious and nervous headaches have continued for any considerable time, those parts become more delicate, and endowed with a share of sensibility that is truly *morbid*, and hence are affected by causes which, in circumstances of sound health, could not have exerted any injurious influence. To this circumstance we are to attribute the duration and obstinacy of some of these affections, even when the exciting causes are removed; and hence long courses of medicines, and continued attention to diet, &c., become necessary, sometimes even through the whole of life.

"When worms in the intestinal canal are the causes whence the headache originates (which may be generally known by the headache being constantly accompanied with itching in the nose and rectum, and fixed pains at the epigastrium, and indeed through the whole course of the intestines,) the remedies which alone will be found to relieve the headache, will be those which either destroy or remove those animals. The most powerful and only effectual vermifuge which I have employed, has been the rectified oil of turpentine, followed by aloes, rhubarb, and calomel. I have given these medicines to children in pretty considerable doses, viz. as half an ounce, and even six drachms, to a strong boy of five years old, without any violent operation, although followed by the removal of the worms. Calomel,

rhubarb, and aloes, I prefer for young children, and generally find them (when combined) efficient. A pint of water saturated with common salt, Dr. Heberden states he has found of singular efficacy in expelling worms from the intestines.

"A very large, perhaps the greater proportion, however, of headaches, arise from disordered function of the chylopoietic viscera. Some of these are accompanied with very severe symptoms, such as at first might well create suspicion that disease exists in the head, when, however, we are satisfied that disorder in the viscera is the source of the affection. The treatment, in the first instance, will be commenced by a complete evacuation of the whole intestinal canal, by gentle repeated antimonial emetics, and by mild continued purgation. For this purpose, jalap, Barbadoes aloes, and soap, with the aromatic confection, or other stimulants, form as good a purgative as any for continued use. The compound extract of colocynth, or scammony, with calomel, where a more active one is required, will be found to answer admirably well. In many constitutions, however, two or three drachms of infusion of senna, or of Epsom or Rochelle salts, taken every morning for a week or fortnight, is found to answer the intention of more effectually evacuating the bowels than the resinous and stimulating purgatives. If, after plentiful evacuations have been procured (and the mucus which is apt to accumulate is removed), the stools should not present a natural appearance, but be gelatinous, or of a pale clay colour, with little fetor, or be dark and offensive, small doses of calomel should be taken every night, or, in very delicate subjects, every other night, to the extent of a grain, with half a gr. of tartar emetic, by which its operation is greatly improved, especially when the stools are dark and peculiarly offensive, in which case we may suspect some disposition to inflammatory action in the mucous membrane of the intestines. This should be followed the succeeding day by infusions of senna or Epsom salts, largely diluted in cold or hot water, as is found most agreeable to the patient. The Cheltenham waters, however, are preferable, if they can be obtained, to be used in combination with the calomel.

"This treatment, persisted in for some time, will be found to operate a great change in the biliary and other secretions, as will be evident from the nature and appearance of the stools, which will assume the natural yellow or brownish colour; if it should not, larger doses of calomel and tartarized antimony must be given, with opiates and tonics, after the manner adopted by Dr. A. Wilson. Another, and very common condition of the abdominal viscera, inducing weakness and irritability, occasioned by a defect in quantity rather than morbid quality of the secretions, and particularly of the bile, occasioning constipation, and a long train of symptoms. This is a fertile source of the headaches with which females are troubled, who, in their menstruation, are regular enough; and it is one not easily removed. I believe the most effectual is regular exercise in the open air, long continued, but not so violent as to induce sweating, because this

defeats the intention, by determining the blood to the skin, and from the abdominal viscera. Horse exercise is also peculiarly useful in these cases, as likewise well ripened fruits, solid animal food, roasted in preference to boiled; and when the stomach bears it, which it generally will, at least after a little use, the strong London porter; when this will not do, Madeira, pure or diluted, with hot water and spice, as is found most grateful to the stomach. The diet should be nutritive and abundant, but over-repletion must be carefully guarded against, as likewise the use of pastry, which, with vegetables, unless well boiled, should be strictly forbidden, and even then sparingly used, as they cause the food to be detained an undue length of time in the stomach, where other changes besides those of digestion go on. I suspect occasionally a fermentive process commences; and hence the generation of so much gas and acidity in the stomach and bowels, giving rise to those distressing nervous affections, such as partial blindness, loss of sensation, &c., followed, as they always are, by pains in the head of a most pungent kind. This class of headaches, arising from indolent action of the bowels, is a very large one, and it is that which receives no relief from the use of mercurial medicines. The blue pill, and small doses of calomel, I think aggravate, rather than alleviate the symptoms in these cases, being so slow in their operation and debilitating in their effects. The following pill in these cases, taken early in the morning, or an hour after dinner, will be found extremely useful. Barbadoes aloes, carbonate of iron, soap, and confection, one grain of each united into a mass.

"Though headache, which is connected with acidity and pain of stomach, will derive relief from the use of tincture of opium with calcined magnesia, or the *liquor potassæ*, in mint or cinnamon water, or the common soda water, these remedies, it will be perceived, are, however, only adapted for temporary relief, which in most cases will be found very considerable. More permanent relief must be looked for from the judicious regulation of the diet and drink, both as respects the quantity and quality, from regular exercise in the open air, agreeable occupations and amusements, avoiding too long continued, and intense study, dissipation and late hours; and perhaps the use of the following tincture may be found to contribute to the restoration of the health of body, and also of the mind, where there is a tendency to low spirits and flatulence. Of cinchona and carscarilla bark, powdered, 2 oz. each, infused in ℔. iv. of white wine; to this add two or three ounces of the compound tincture of lavender; of this a table-spoonful or two should be taken twice a day; before breakfast, and in the evening before tea. I need not add, that many other remedies have been employed with great success in the cure of headache, arising from the irritability and debility of the stomach and bowels. Amongst these, solid opium taken internally, and applied externally in form of tincture, with camphorated spirit of wine to the temples, has afforded great and permanent relief, when other remedies have totally failed. This medicine alone, but particularly in combination with calomel and guaiac. has afforded great relief in gouty and rheumatic headaches, especially if aided by caustic

issues in the neck, and repeated blisters. By these means I once succeeded in removing a very obstinate hemicrania, and likewise in the same lady, a painful nervous affection of the face on a former occasion.

"But in order to render these medical and peptic precepts efficient, it requires patience and perseverance, as well on the part of the patient, who is the unhappy subject of the malady, as of the physician, who has the task of treating it. The remark of Montanus, on the treatment of hypochondriac affections, applies with nearly equal force to headache—'In curatione morbi non licit præfinere tempus mensis unius aut anni, sicut in aliis contingat, sed oportet in toto vitæ suæ tempore curationi, operam dare interdum curatione interdum preservationi attendendo;' and a calamity which cannot be removed may thus oftentimes admit of alleviation."

Mr. A. Rennie *on Gout* *.—This publication is chiefly employed in criticising the works of preceding authors who have written on gout, particularly Dr. Scudamore, whom he treats very unceremoniously; for example—

"In quest of evidence to support his assumption, our author (Dr. S.) betakes himself from botany to chemistry, and with mortar, crucible, and alembics, straightway descends into his favourite element, the gouty urine, where we suddenly lose sight of him, and of all rational pathology together. After a long and fruitless search, amid the commotion of "pink and brick-dust sediments," we are compelled to leave our author for drowned. Not all the inductive powers of a Davy, the scientific accuracy of Thomson, or the ingenuity of Brande, can save his chemical life."—p. 106.

Alas! poor Yorick! drowned in urinary sediment! Our author, however, has something better than this piece of pathological wit; for example, Mr. Rennie remarks, respecting the acid supposed to exist in the blood as a cause of gout.

"The amount of the whole view of the subject is—1st, That acid matter in the stomach, whether extraneously received or formed in that organ, is of very frequent coincidence with the occurrence of gout; but as gastric acid occasionally is manifested, in almost every constitution and period of life, unconnected with gout, the presence of this matter can only be regarded as capable of exciting gout when associated with some other peculiar constitutional condition.

"2d, That increased secretion of acid principle in the urine is also of frequent occurrence in gout; but is not peculiar to these constitutions, occurring indiscriminately, in most disorders connected with disordered digestive functions. That increased specific gravity of urine is also common to gout and to other inflammatory disorders. From which observations, no direct or satisfactory evidence is afforded respecting the proximate cause of gout.

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* Observations on Gout, Critical and Pathological, &c. By A. Rennie, Surgeon. pp. 179. 8vo.

"3d, The same may be said of acid in the perspiration, which is not peculiar to gouty habits.

"4th, That the formation of concretions in the joints, though apparently peculiar to gouty constitutions, (vide Scudamore, p. 125) is of rare occurrence, comparatively, and can afford no satisfactory basis for any direct conclusion respecting a proximate cause.

"5th, That there is no evidence of the presence of acid already formed, or of the principle of acid in excess, in the blood of gouty constitutions; seeing the deposition of such matter, by the various secreting acts, gastric, renal, capsular, and cutaneous, may take place from blood in its usual constituent condition, by some change in the secretory processes, to which the gouty constitution is peculiary liable.

"6th, That the assumption of a depraved state of the blood, by imbibition of saline acrimony from the stomach, being the proximate cause of gout, is entirely hypothetical, and inadequate to afford any intelligible or rational explanation of the symptoms of gout.

"7th, That some other mode of explaining the *modus agendi* of gastric acid in the production of gout must be attempted, necessarily bearing reference to some peculiar state of the constitution, which may be denominated the gouty disposition or diathesis."

In summing up his critical remarks, he gives the following general inferences:—

"1st, That gout is not simply a local, but a constitutional disorder.

"2d, That, from the concurrent observations of the various authors noticed, certain derangements of the hepatic, gastric, and alvine visceral functions, though not adequate to the production of gout, are, in some manner or other unexplained, invariably and essentially contributive to that disorder.

"3d, That although the gout is usually associated with certain disordered conditions of the lymphatic and absorbent system, the cause of the disease does not ultimately reside in that texture.

"4th, That, in respect to the circulation, gout does not essentially depend either on the existence of a morbific matter in the blood, or on general superabundance of that fluid beyond the healthy standard.

"5th, That though, by the concurrence of medical authority and observation, certain disordered conditions of the circulation, especially consisting of irregular distribution of the circulating equilibrium, and variation in velocity, consisting of inactivity and collapse, followed by febrile re-action, are, in some obscure manner, essentially connected with the production of the disorder termed gout: yet these derangements of the circulation appear to be referrable ultimately to some peculiar condition of the power by which the circulation is effected.

"6th, That the probability, *à priori*, lies strongly in favour of the position, that the proximate cause of gout ultimately is referrable to the nervous system, the organic source of vital and functional power: which supposition is confirmed by the result of the preceding observations. Vide 1st, 3d, and 5th."—p. 143.

Mr. Rennie goes on to say—

"Having thus adduced evidence almost amounting to demonstration, —consisting, firstly, of indirect and negative inferences, founded on observation; and secondly, of direct proofs derived from the pathological views of the most eminent authors on this subject, and confirmed by the concurrent practical observations of accurate and original observers of the phenomena,—that the constitutional tendency to the disorder of the vital and textural functions denominated gout, ultimately is referable to some peculiar condition of the nervous system, the organic source of general, vital, and functional power,—the important query is, What is that condition?

"This question may be answered in two methods. First, by a general pathognomonic proposition, founded on the materials already adduced, as comprising the views of pathological observers in general on this disease. In this method, the following enunciation appears to be suggested.

"That the gouty disposition or diathesis is to be regarded as consisting of a debilitated condition of the general nervous system, and of increased susceptibility to the influence of causes productive of collapse and re-action generally, and a peculiar morbid action locally, induced by the operation of debilitating influences affecting the animal system; this deficiency of nervous energy consequently affecting the whole organized textures and functional capacities, but especially manifested in the digestive organs and extremities.

"The second method of reply is, by independent observation and induction,—by inferences drawn from the acknowledged influence of those causes by which the gouty diathesis or disposition has been induced,—and by reference to those symptoms manifested by the constitution when subjected to their operation, and thereby rendered liable to the disease. How far results thus attained by the author are accordant with those suggested by preceding inquirers, will hereafter appear."

Mr. Annesly *on the Diseases of India**.—This appears to be a very elaborate work, chiefly on Epidemic Cholera, statistical and topographical reports of Military Diseases, and practical Observations on the effects of Calomel on the Alimentary Canal. We strongly recommend the work, not only to the tropical practitioner, but to those also who practise in more temperate climates, as the comparison of the effects of diseases, and their remedies, under such different circumstances, cannot fail to suggest valuable improvements. Dr. Johnson's excellent work on Tropical Diseases, indeed, has exercised a very decided influence over our daily practice at home; and much may also be learned from the present work of Mr. Annesly, as well as from the smaller publication of Dr. W. Ainslie, formerly noticed.

* Sketches of the most prevalent Diseases of India, &c. By James Annesly, Esq. Madras Medical Establishment, &c. 8vo. London.

M. Meyraux *on the Cauterization of the Pustules in Small Pox**.—Experience has proved to M. Meyraux, that cauterization, in order to be beneficial, must be practised the first or second day of the eruption. When employed later, it has not the effect of destroying or preventing the formation of the pustules which follow their regular course, and leave the usual marks and excavations in the skin. Many methods of using the caustic have been practised; that most commonly adopted, is to wash the part with a solution of the nitrate of silver; but the author objects to this method, and mentions many inconveniences attending it, the first of which is, that it acts upon the sound as well as upon the unsound parts; and the second is still more forcible, for he asserts, that the development of the pustules still goes on under the black crust, or mask, to the same extent as if it had not been employed. The safest method, according to M. Meyraux, is to open the pustules one after the other, and to apply to them a piece of the lunar caustic in the shape of a pencil; for the purpose of opening them, a lancet is the best instrument. It is a very curious circumstance, that the passage of the galvanic fluid, which never produces the inflammation of any organ, completely extinguishes the pustules of small-pox. The most efficacious method of producing this almost instantaneous effect, is to make use of a very fine needle, which is to be placed in the pustules, and the voltaic fluid is to be made to penetrate them. As the success of cauterization is subordinate to the general treatment of the patient, none of the usual indications of cure are to be neglected. The author has remarked, that the application of the caustic only becomes useful when the inflammatory action has been subdued, either in the principal viscera, or in the skin, when the inflammation of that part predominates; for then the general re-action becomes more intense, and the suppuration of those pustules, which have not been destroyed, is more abundant. M. Meyraux has proved, that the advantages of this plan may be extended to cases of boils, venereal pustules, the chicken pock, and some other eruptive diseases.

A warm discussion on this subject recently took place at Paris, between some of the most eminent practitioners, but the general impression seems to have been unfavourable to this new method of treating small-pox.

VII. MIDWIFERY.

Holbrook *on Mammary Inflammation*.—The very common occurrence of inflammation in the female breast during suckling, renders it a subject of great interest to the practitioner, and we shall, therefore, offer no apology for making a long extract from the judicious remarks of Mr. Holbrook on the subject.

"As it is my principal object to endeavour to point out a mode

* Archives Generales.

of treatment calculated, in most cases, when *early employed*, to arrest the progress of this inflammation, I shall revert to some further observations on its early stages.

"It not unfrequently happens that, from excoriations and sores about the nipples, the act of suckling becomes so painful, that the child is not applied sufficiently often to prevent the breasts from over-distention, and which then becomes a cause of inflammation and its consequences; the treatment of these affections, therefore, becomes an object of attention as a preventive means.

"Some women have naturally more tender nipples than others; and frequently they are made so from the pressure of their dress, which makes them flat, and they give way on being drawn out during the act of suckling, and they then frequently bleed very much: sometimes there are superficial ulcers in addition to the cracks. The most useful application which I have tried is the bals. Peruv. mixed with any simple ointment, applied to the part two or three times a day, at the same time defending the nipple from the pressure and irritation of the clothes by means of a little cup made of wax, or a proper glass; and with this attention the part is in general healed. When the cracks appear disposed to fill up, touching them gently with the argent. nitrat. has a good effect; and to the little ulcerations, the application of a solution of the argent. nitrat. is often of great service, in changing their action, and disposing them to heal: but while the child continues to irritate the nipple by sucking, it will frequently be almost impossible to heal it. In such cases, the artificial teat should always be used.

"As it sometimes happens that inflammation of the mamma is preceded or ushered in by febrile symptoms, attended by rigors, pain in the head and back, thirst, and quick, full pulse—in which case there seems to be indicated a considerable inflammatory state of the system—I deem it advisable to commence the treatment by taking away a quantity of blood, in proportion to the urgency of the symptoms, followed by an active aperient of calomel, and infusion of senna with salts; and desire the patient to remain in bed, to have the breast suspended by a proper bandage, and the milk gently drawn from it occasionally, to diminish tension and relieve the vessels: subsequently to which, I direct a nurse *to rub the whole mamma constantly and gently, with the flat of three fingers,* moistened with a little warm olive oil, for half an hour, which seldom fails to relieve the tension, and must be repeated as often as it returns. If, after this treatment, the fever and pain still continues on the following day, and the inflammation unabated, I direct ten or twelve leeches to be applied to the part, three or four near the nipple, and the remainder round the base of the breast, and encourage the bleeding by fomenting with warm water.

"The leeches, applied in this way, do not interfere with the *diligent use of the friction;* in addition to which treatment, I give internally a mixture composed of infus. rosæ, magnes. sulph. and

liq. antim. tart. In general, by this plan, on the third day the inflammation begins to subside; but if, however, that effect should not so soon appear to be taking place, I persevere in the same treatment as long as no decided symptom of suppuration makes its appearance, by diligently employing the friction, and repeating the leeches as often as circumstances seem to indicate its being necessary: taking care to procure, by the use of the mixture above stated, at least four watery evacuations in twenty-four hours, and keeping the patient on an abstemious diet, corresponding to the state of the system.

"This treatment will, in general, succeed in overcoming the inflammation in four or five days; but the friction should be continued until every appearance of fulness and hardness is entirely removed, and the breast regularly and gently drawn: the suspensory bandage should also not be left off. The bowels must be attended to, so that at least two evacuations are procured every day by the same mixture, with the acid. sulph. dilut., in lieu of the liq. antim. tart.

"Should it, however, unfortunately happen that this means fails to arrest the progress of the inflammation, and suppuration takes place, indicated by a throbbing pain in the part, and an œdematous feeling of the integuments, means must then be had recourse to which favour the bursting of the abscess; such as warm poultices of linseed, and fomentations of poppies, and chamomile decoction. In no case ought the abscess to be opened by a lancet, but allowed to break of itself; by which means a sufficient opening always takes place to admit of the complete discharge of the matter, and sometimes in one, and often in two or three places. The discharge mostly consists of pure pus; sometimes mixed with milk, at others it is grumous; and is most commonly followed by the separation of a slough, and until which takes place the poultice should be continued; afterwards, common dressings, and the breast supported. When granulations begin to form, adhesive stripes should be applied. If, as sometimes is the case, sinuses form, they must be laid open.

"When the collection and discharge of matter has been considerable, and the tone of the system appears to have suffered, it ought to be supported by means of bark, with the vitriolic acid.

"When the inflammation and suppuration has been confined to the cellular membrane, the secretion of the milk is generally restored during the healing of the abscess, and the child may again be allowed to suckle from that breast: but when the substance of the gland has been affected, the event is not always so favourable, and frequently it never recovers its secreting function. In some instances irregular indurations remain, which have been known, after a certain period of life, in particular constitutions, to become the foundation of more serious disease.

"In the early stages of the indurations which are left after the healing of the abscesses, the use of friction, in the manner I have

directed, is the most effectual means of reducing them, assisted by giving a proper degree of support to the breast, by a bandage carried over the shoulder, to prevent the effect of its pendulous tendency.

"However trifling and insignificant these directions may at first sight appear, which I have given in recommendation of the utility of friction in the early stages of this complaint, I am sure, from repeated trials of its utility, that, if steadily persevered in, before the inflammation has gone too far, and assisted by the frequent application of leeches, and the other means I have directed, but few instances will occur, unless in very unfavourable constitutions, where suppuration and its consequences will not be entirely prevented, both in such cases where the inflammation is confined to the cellular membrane, and in the more deep affections of the gland itself; but in the latter case, as the progress of it is not in general so rapid, so does the remedy require to be longer persevered in: and cases have occurred in my practice, where success followed a perseverance in it, after the continuance of the inflammation for nearly a fortnight.

"In some cases of inflammation of the gland, the inflammation appears to extend along the tubuli lactiferi, in which cases so much pain is occasioned in having the breast drawn, that it is quite insupportable. Here, in addition to the friction, warm emollient fomentations should be frequently used; and in order to combine their effects, a fomentation composed of a weak solution of mild soap, in warm soft water, will answer the purpose with great advantage, as its saponaceous quality affords great facility to the employment of the friction, which, in this way, can be used at the time of fomenting.

"When, in these cases, suppuration takes place notwithstanding our exertions, or if we are called in too late, one or more of the tubuli lactiferi frequently bursts into the abscess; in which cases milk will be discharged with the matter: and I have sometimes known it occasion a longer time in healing the wound, as the milk would continue to be discharged that way for some time, and appear to be the only cause of retarding the healing process.

"From these observations it will be found, that I have altogether neglected the recommendation of cold applications; and it is one of the advantages which I consider as belonging to the treatment by friction, that it deserves, in my opinion, a decided preference over such applications, and allows of doing without a remedy, which in every case is much disliked by the patient, and at the same time very uncertain in its effect, and not well adapted to the treatment of the complaint."

Dewees' *System of Midwifery**.—This is a reprint of an

* A Compendious System of Midwifery, &c. By W. P. Dewees, M.D., &c. New York, 8vo. London, Miller.

excellent American work, by an accoucheur of great experience. The work is comprehensive, accurate and minute; and though it will not, perhaps, supersede the similar work of Mr. John Burns, it may be recommended as an excellent work for reference and study, to those who dislike the price and the bulk of Dr. Davis's quarto.

VIII. MEDICAL JURISPRUDENCE.

Mr. R. Phillip's and Dr. Traill *on Tests for Arsenic.*—The following improvements in the mode of using the tests for this poison have been suggested by Mr. R. Phillips, of London, and Dr. Traill, of Liverpool. 1. For executing the process of reduction and sublimation, almost every work on chemistry and on medical jurisprudence advises the analyst to expose the mixture of the black flux and oxyde for ten or fifteen minutes, to the heat of a charcoal choffer, in a coated tube, a quarter of an inch in diameter, and eight or ten inches long. Both Mr. Phillips and Dr. Traill very judiciously condemn this process as clumsy and unnecessarily complex. Dr. Traill proposes to subject the mixture to the heat of a blow-pipe lamp, in a small and naked tube, and says he has thus detected the tenth part of a grain. This mode of procedure we have been always in the practice of following, and have experienced no difficulty in procuring an obvious metallic crust from a sixteenth part of a grain. Mr. Phillips, however, advises the substitution of the ordinary flame of a spirit-lamp, which answers admirably, for it does not disperse the sublimed metal so much as the blow-pipe. As tubes are not always at hand, he recommends the use of a long ten-drachm phial, and describes minutely the mode of employing it. He ought to remember, however, that a tube is not always at hand only where the experimenter is not a chemist; and that the expedient recommended will succeed, like all other shifts, only in the hands of a practised person. With the ten-drachm phial, the experiment will often fail, if the quantity be minute; for the sublimate will be diffused too much to be distinctly recognized. 2. Mr. Phillips has given a simple process for preparing a solution of sulphuretted hydrogen. Authors seem universally to prefer the solution of the gas, but for what reason we know not. We have certainly found a stream of the gas itself to be quite as delicate; and it is of course much more easily applied, as the solution cannot be kept for occasional use. 3. He has suggested a very neat improvement on the cuprous test. Add the solution of potass to that of the sulphate of copper; a

blue precipitate is thrown down. If an arsenical solution be then added also, the precipitate becomes grass-green or apple-green. The change, we find, takes place slowly, unless the quantity of arsenic be large. 4. When the arsenic is dissolved in coloured fluids, it is difficult or impossible to obtain the true precipitates with the liquid tests. To remove the colour, Professor Orfila recommends the previous use of chlorine in solution. This, however, has the disadvantage of rendering the silver test difficult of application, because the chlorine throws down the silver in abundance; and besides, we have observed that, although the colour was destroyed in the solution, it often re-appears in the precipitate, so as to give it a dingy hue. Mr. Phillips proposes to destroy the colour with ivory-black. "On considering this part of the subject, it appeared to me that animal charcoal (ivory-black) might be advantageously employed for the purpose of destroying the colouring matter. I therefore mixed some of it with a coloured solution of arsenious acid, namely, the *Liquor Arsenicalis* of the London Pharmacopœia. I found that the colouring matter was so completely destroyed in a few minutes, that the test of nitrate of silver, or any other, might be readily applied. I repeated this experiment with port wine, gravy-soup, and a strong decoction of onions, and succeeded, in these cases, in procuring a solution sufficiently colourless for the application of the most delicate tests. It might be supposed that the phosphoric acid, which the animal charcoal contains, might have some share in the production of the yellow precipitate with silver. I found, however, that water or wine, which was digested on the animal charcoal, produced no effect with the nitrate of silver, excepting a slight precipitate of chlorine; and to prevent this, the ivory-black should be washed on a filter with boiling distilled water, till the fluid running through ceases to be affected by nitrate of silver. If, however, the ivory-black be of good quality, this precaution is unnecessary.

IX MATERIA MEDICA AND CHEMISTRY.

The following is a specimen, taken at random, of a new work now in the press, and nearly printed, entitled, "A New Supplement to the Pharmacopœias of London, Edinburgh, Dublin, and Paris, forming a complete Dispensatory and Conspectus, &c. &c." By the Editor of this Journal.

HYDRARGYRI OXYMURIAS. L. Oxymuriate of mercury, or Corrosive sublimate, *Murias Hydrargyri corrosivus* E. D. *Mur. Hydr. Oxygenatus* P. Take ℔ij by weight of purified mercury, xxx by weight

of sulphuric acid, ℔iiij of dried muriate of soda; boil the mercury with the sulphuric acid in a glass vessel, until the sulphate of mercury is dry; rub this when it is cold with the muriate of soda in an earthenware mortar, then sublime from a glass cucurbit by heat gradually increased.

Decomposition. According to the *old rationale*, the sulphuric acid first oxidizes, and then unites with the mercury, forming a subsulphate of mercury, sulphureous acid gas being given off, and this subsulphate being decomposed by the muriatic acid of the common salt, forms a muriate which by sublimation absorbs oxygen, and forms an oxymuriate. The *new rationale* is,—that when the sulphate, subsulphate, oxy-sulphate, or per-sulphate, of mercury is triturated with common salt, they are both decomposed, the oxygen of the sulphate uniting with the sodium, and forming soda, this soda going over to the sulphuric acid and forming sulphate of soda which remains as a residuum, and the chlorine *(muriatic acid gas)* going over to the mercury, and forming a bichloride or perchloride, or as the Codex calls it a *Deuto-Chloretum Hydrargyri.* As it does not contain either muriatic acid nor oxygen, the names of the pharmacopœias are very improper, and it ought to be called Perchloridum Hydrargyri.

Soluble in water, alcohol, æther, solution of muriate of ammonia, the mineral acids, and in solutions of common salt which Dr. J. Davy has shown to increase its solubility greatly.

Incompatible with alkalies and their carbonates, lime-water, soaps, sulphuret of potass, volatile oils and essences, sulphur, tartarized antimony, superacetate of lead, nitrate of silver, the metals, astringent vegetable infusions, albumen, gluten, and almond emulsion.

Medicinally it is acrid, styptic, corrosive, stimulant, alterative, and antisyphilitic, and is used as a powerful remedy in syphilis and cutaneous disorders. In doses of gr. $\frac{1}{16}$ to gr. j. in form of pill, with opium or extract of poppies, for lepra, old ulcers, acne, and chronic rheumatism. In order to excite rapid salivation it has been dusted over a raw surface from recent scarification by the cupping instrument. The effect is certain, but the pain is excruciating. I have seen it applied in obstinate articular swelling with advantage. It is also applied as a wash in acne; to reduce fungous ulcers; and as a gargle in venereal sore throats.

Poisonous in large doses: producing, at first, an acrid metallic taste, burning in the throat, swelling in the mouth and throat, usually with copious salivation, despondency and anxiety of mind, then violent rending pains in the stomach and bowels, nausea, vomiting, and retching, convulsions, cold sweats, cramp, and death.

Treatment. Orfila advises large quantities of white of egg mixed with water, which converts the corrosive sublimate into calomel. M. Tadei proposes the gluten of wheat as an equally efficacious antidote. Bleeding is proper when much blood is vomited, and the inflammation runs high. Demulcent drinks, such as barley-water and milk, ought also to be given, and continued till recovery is effected.

Tests. In examining the contents of the stomach and bowels, for suspected corrosive sublimate, it is necessary to recollect that some if not all of it may have been changed into calomel by the substances it may have met with. If it be heated to redness in a small glass tube, with very dry subcarbonate of potass, the mercury will be volatilized and appear in globules. Corrosive sublimate is likewise precipitated from solution—of a white colour by ammonia; of a yellow colour by potass; and of an orange colour by lime water. It may be prepared for those tests by agitating the suspected fluid with a drachm or two of sulphuric ether in a phial, allowing the residuum to subside, pouring off the supernatant ether, evaporating in a porcelain capsule, and dissolving the matter thus obtained in distilled water.

A much simpler way is to drop a little of the suspected fluid upon a piece of gold such as a guinea, and with a key or any piece of iron, touch both the dry part of the gold, and the fluid so as to form a galvanic circle, when the corrosive sublimate will instantly coat the gold white. A drop of nitrate of tin will precipitate of a dark brown colour the three millionth part of a grain. (Bostock.)

Adulterated most commonly with calomel, which may be known by its being insoluble. It frequently also contains arsenic, which may be detected by the tests given under that article. Muriate of iron may be detected by prussiate ef potass.

Eau de Cologne, Cologne water. Take six pints of rectified spirit of wine, ℔j. ¾ of spirit of rosemary, one pound two ounces of Eau de Melisse des Carmes, an ounce and a half of essence of bergamot, ℥ ¾ of essence of Neroli ʒi. of essence of Cedrat, one drachm and a half of essence of lemon, ʒi. of oil of rosemary. Mix and distil in a water bath. It must be kept in a cool cellar. It is celebrated as a perfume and cosmetic, and was much used by Buonaparte.

Or, take Oj. alcohol ʒi. each of oil of bergamot, oil of orange peel, or oil of rosemary, and bruised cardamon seeds, Oj. of orange flower water. Distil one pint by means of a water bath.

Imitated by pouring into a bottle containing ℥x. of spirit of wine, ʒij. each of essence of bergamot, and oil of rosemary, twenty drops of essence of lemon, and twelve drops of essence of Neroli or oil of orange. Cork the bottle well, and seal it with wax, shake it frequently for the six following days, and then add ℥j. of balm water. Cork, seal, and shake it again for three or four days, when it will be ready. Care must be taken to mix the ingredients in this order for if the balm water is added before the alcohol it will spoil it.

Adulterated with distilled water, and with alcohol scented with rosemary oil, and bergamot essence.

Eau Divine, Divine water. Take one drachm each of essence of bergamot, and essence of lemons, one gallon of rectified spirit, distil in a water bath, and add four pounds of sugar, dissolved in two gallons of distilled water, and lastly four ounces of orange flower water.

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BOOKS RECEIVED FOR REVIEW,

DURING THE LAST QUARTER.

[N. B. Only those Books sent gratis and free of expense, can be entered on this List.]

An Elementary Compendium of Physiology for the Use of Students, by F. Magendie, M.D. &c. &c. Translated from the French, with copious Notes, Tables, and Illustrations, by E. Milligan, M.D. 2d edition. 8vo. pp. 618.

A Treatise on the Diseases of the Eye, including the Doctrine and Practice of the most eminent Modern Surgeons, and particularly those of Professor Beer, by George Frick, M.D. &c., a New Edition, with Notes, by Richard Welbank, M.R.C.S. &c. with an Engraving, pp. 308.

A Treatise on the Physical and Medical Treatment of Children, by William P. Dewees, M.D., Lecturer on Midwifery, &c. Philadelphia. 8vo. pp. 554.

A Manual for the Use of Students preparing for Examination at Apothecaries Hall, by Jonathan Pereira, M.R.C.S. Apothecary to the General Dispensary, Aldersgate-street, &c. 18mo. pp. 216.

A Letter addressed to the Medical Profession, on the Encroachments on the Practice of the Surgeon-Apothecary, by a New Set of Physicians, by Medico-Chirurgus. 8vo. pp. 20.

An Essay on the Application of the Lunar Caustic, in the Cure of certain Wounds and Ulcers, by John Higginbottom, Nottingham, M.R.C.S. 8vo. pp. 147.

The Edinburgh Journal of Medical Science, exhibiting a Compendious View of the progressive Improvement and Discoveries occurring in Practical Medicine, Practical Surgery, Midwifery, Anatomy, Physiology, Pathology, Chemistry, Pharmacy, Botany, Materia Me-

dica, and Medical Jurisprudence, &c. &c. No. I. 8vo. pp. 250. To be continued Quarterly. *In exchange.*

Dictionnaire de Médecine, par MM. Adelon, Andral, Beclard, Biett, Breschet, Chomel, Cloquet, &c. Tome xiv.

Bulletin des Sciences Medicales redigé, par M. de Fermon. Four Numbers. *In exchange.*

The New-York Medical and Physical Journal. Edited by John B. Beck, M.D., Fellow of the College of Physicians and Surgeons of New-York, Corresponding Member of the Medical Society of London, &c. &c.; Daniel L. M. Peixotto, M.D., one of the Physicians to the City Dispensary; and John Bell, M.D., Surgeon to the New-York Eye Infirmary. No. 16. *In exchange.*

The Medical Recorder, or Original Papers and Intelligence in Medicine and Surgery, conducted by Samuel Colhoun, M.D., Member of the American Philosophical Society, Corresponding Member of the Medical Society of London, &c.; assisted by an Association of Physicians in Philadelphia, New-York, Baltimore, and Norfolk. No. 33. *In exchange.*

Annali Universali di Medicina compilati dal Signor Dottore Annibale Omodei. Three Numbers.

Revue Médicale Française et Etrangère et Journal de Clinique, de l'Hotel-Dieu et de la Charité de Paris. Four Numbers.

Researches into the Nature and Treatment of Dropsy in the Brain, Chest, Abdomen, Ovarium, and Skin; in which a more correct and consistent Pathology of these Diseases is attempted to be established, and a new and more successful Method of treating them recommended and explained, by Joseph Ayre, M.D., Member of the College of Physicians, &c. pp. 242. 8vo. London, 1825.

ANDERSON'S

QUARTERLY JOURNAL

OF

Medicine and Surgery.

N°. II. APRIL, 1826. VOL. III.

ART. I.—*An Introduction to the Use of the Stethoscope; with its Application to the diagnosis in Diseases of the Thoracic Viscera; including the Pathology of their various Affections.* By WILLIAM STOKES, M.D. post 8vo. pp. 238. Edin. 1825.

A Treatise on the different Methods of investigating the Diseases of the Chest, particularly Percussion, and the Use of the Stethoscope. Translated from the French of M. COLLIN, with an additional Preface. By W. N. RYLAND, M.D. 18mo. pp. 67. Lond. 1825.

IT is evident from the appearance of these two works, nearly at the same time, in the two capitals of the island, that the stethoscope and percussion are making their way amongst us, though slowly; for however valuable, they are by no means in general use.

"It requires," says Dr. Ryland, "very few visits to the hospitals in any of the capital cities of the kingdom, to prove the truth of this remark; nor would it be difficult, in many of them, to find poor creatures left to their fate, as labouring under phthisis, where well adapted treatment, founded on a more correct diagnosis, might restore them to health."

The causes of this apathy are pretty plainly stated by the same gentleman; the principal of which are laziness and impatience. But on this subject it will be proper to hear him in his own words.

"It has been urged," he says, "as an objection to the use of the ste-

thoscope, that it has too much the appearance of quackery; and that immediate auscultation possesses all the advantages without exciting the ridicule.

"This objection is certainly very futile, and I must confess it appears to me rather imaginary. In hospital practice, and among the lower classes, I have never met with any opposition; on the contrary, patients have seemed gratified by the appearance of additional attention. As to what has been advanced in favour of bringing the ear in immediate contact with a female's breast, in preference to the use of an instrument which enables one to hear with ten times the accuracy, at a respectful distance, and seldom requires the part to be naked, it would be ridiculous to waste an argument upon it: let both plans be tried upon half a dozen patients, and the one which merits preference will be soon decided upon.

"All instruments should be avoided, when not particularly necessary; but really when the cylinder is quietly taken out of the pocket, and used without having any miraculous divining power attributed to it, it excites as little surprise as any novelty with which I am acquainted. I am afraid, the care and attention necessary for acquiring the use of it, are the greatest objections to its general adoption."

Dr. Ryland has contented himself with merely translating Collin, though he observes that he could easily have given an appendix of original cases in support of M. Laennec's accuracy.

"From what I have seen," he says, "I can safely add my humble voice in support of the use of the instrument, of which I have had a tolerable experience, commenced at the Paris hospitals, more especially, the 'Necker,' and perseveringly continued up to the present time."

The work of Dr. Stokes, to use his own words, "is destined to be the assistant of the student, whether as a tyro, first commencing his medical labours, or as one more advanced in the Apollonian art, who may wish to become acquainted with the new methods of diagnosis, in diseases of the thoracic cavity."

To hear him, no suitable work has as yet been published upon the subject. "It appears to me," he modestly observes, "That neither in the works of Laennec nor of Forbes, have the accounts of the different signs obtained by the stethoscope been properly connected with that of the pathological state of the viscera, to which they owe their origin. I have, therefore, after describing each phenomenon, endeavoured to give a succinct account of the morbid condition producing it; so that the student, upon perceiving any deviation from the natural state, may, when he compares it with the description of the phenomenon which it most resembles, be at once led to that of the alteration which is to be expected."

And this arduous task you will no doubt imagine, reader, he has performed by means of his own incessant study, and his own unremitting practical observation. From the emendation

of Laennec and the improvement upon Forbes, you certainly can expect nothing less. But after all, *pace tanti viri*, it is the arrangement of the materials only which is his own. "Its chief merit," he himself has said, "is the arrangement, which, as a high authority has observed, constitutes half the value of a work."

The following passage, commendatory of the stethoscope, may be extracted; and we shall leave it to the reader to find out whether it is original or borrowed:—

"It is a common objection," he says, "to the use of this instrument, that it leads to no practical results, and therefore, that it is more useful to the pathologist than to the physician. But those who make use of such an objection, only betray their ignorance of the use of the stethoscope, and, like unjust judges, pronounce sentence without examining into the merits of the case. The stethoscope, besides its vast importance in the diagnosis of a most difficult class of diseases, does lead to many useful practical results. Let us take the cases of pneumonia and of pleurisy, two of the most common and severe affections of the thoracic cavity; where a daily examination, by means of the stethoscope, points out the progress of the disease, its exact seat, the effect of our remedies, the necessity of their repetition, or the utility of their omission. In circumscribed pleurisy, in wounds of the thorax, its utility is undeniable. From ignorance of its application, displacement of the heart, arising from a pleuritic effusion, has been mistaken for dilatation of that organ, while the original disease was entirely overlooked. Pleurisy has been mistaken for rheumatism, and a critical diaphoresis has been checked in pneumonia. In confirmed phthisis, when the hopes of the sufferer's friends are excited by an ignorant practitioner, the physician, with the aid of the stethoscope, has at least the melancholy advantage of saving to those friends the pangs of disappointed hope, and to the patient himself, the torture of useless remedies. By means of the stethoscope, we can detect latent inflammatory affections of the pulmonary organs, long before they have become evident from their external symptoms. These are cases where a practitioner, ignorant of mediate auscultation, would be completely at a loss."

The first subject Dr. Stokes treats of is percussion, and here every word he utters is taken from Collin, except a few remarks at the end, from Laennec.—See Ryland's Collin, pp. 9-13.

Mediate auscultation, upon which he next enters, is drawn from the same source, and that also without acknowledgment. —See Ryland, pp. 14-16.

For the natural phenomena of respiration, he is also indebted to his friend Collin; but he takes care to melt down all the subdivisions into one smooth tale, by which we less easily detect the plagiarism. For the same purpose, his translation is very free, and in general more elegant than Ryland's. We adduce

the following passage as a specimen.—See Ryland's translation, pp. 16-17.

"When we apply the stethoscope," (says M. Collin, in Dr. Stokes's translation) "to the chest of a healthy person, we hear, during respiration, a slight but very distinct murmur, which indicates the penetration of the air into the cells of the lung, and its expulsion.

"This murmur is nearly equally strong at every point of the chest, but especially where the lungs are nearest to the surface; that is to say, in the superior lateral, and postero-inferior parts. The axilla, and the space comprised between the clavicle and edge of the trapezius, are the points where it is heard with the most intensity; over the larynx, the trachea, and root of the lungs, the respiratory murmur is distinctly heard; but it has a particular character, which causes us at once to perceive that the air is passing through a canal of greater diameter than the cells of the lung. In these situations we do not distinguish the expansion of the pulmonary tissue, and the air seems, during inspiration, to be drawn in through the cylinder, during expiration, to issue from it. The sound of this respiration, which is termed tracheal, may be exactly compared to that produced by a pair of bellows.

"The sound of respiration is more distinct, as the latter is more frequent. A slow and deep inspiration is sometimes scarcely heard; hence it is often necessary to desire those whom we examine to breathe quickly and strongly.

"In children, women, and men of an irritable habit, the respiratory murmur is distinct and sonorous; the expansion of the cells is more perceptible, and the sensation is such, that they appear to be more dilated than in the lungs of a healthy man. This difference of sound is perceived most during inspiration. We find it also better marked as the person is younger. It generally remains until puberty, or a little beyond that age. In adults the intensity of the respiratory murmur varies much; there are many healthy persons in whom it is scarcely heard, unless when they make a strong inspiration; in these cases the respiration is generally frequent. In some individuals, on the contrary, it is distinct, and even similar to that of infants, and these persons seem more disposed to diseases of the pulmonary organs."

Next follow the pathological phenomena; and here, if we except some insignificant additions from other authors, M. Collin is also laid under requisition.—See Ryland, p. 4, 5, 6, 7, 8, 21, 22, 23.

In describing the rattles, or, as he is pleased to call them, the *rales*, M. Collin again lends him no inconsiderable assistance; though, in consequence of the admirable *arrangement* of Dr. Stokes, that assistance cannot be recognised at a first glance.

"By the term *rale*," (says M. Collin, in Dr. Stokes's translation,) "we understand any sound produced by the circulation of the air through the bronchial tubes, and pulmonary vesicles, differing from the natural respiratory murmur. These rales seldom occupy the whole of

the lungs; they are most generally heard over a small part only, while in other parts respiration remains natural, or even becomes puerile; they indicate the narrowing of the bronchial tubes, or the existence of some liquid in the latter, or in the air cells of the lung; their difference of sound, their distance or vicinity, and the extent which they occupy, teach us both the place where they occur, and some of the physical properties of the liquids giving rise to them.

"At a small distance from the place where any rale is heard, the respiratory murmur may be natural, although in the neighbourhood of a severely affected part.

"These sounds accompany the cough when it is present, but it is more convenient to examine them during respiration; they may occur alone or combined with one another, either in the same or in different points; some remain through the entire period of the disease which they characterize; others, which might be called intermittent, appear and disappear in turns; sometimes occupying one place, sometimes another, so that they are frequently wanting at the moment we wish to examine them.

"There are four species of rale enumerated, viz. the *crepitating*, the *mucous*, the *sonorous*, and the *hissing* rale."

See Ryland, p. 23, who calls them the sonorous, the hissing, the mucous, and the crepitating *rattles;* and speaks of them in that order—on which Dr. Stokes, we doubt not, thinks he has improved.

Dr. Stokes speaks of the CREPITATING and MUCOUS *rales*, as little else than varieties of the same *rale;* and in justice, we shall allow him to be heard upon the subject, especially as in this instance *he has not borrowed from M. Collin.*

"As the crepitating and mucous rales," he observes, "appear to derive their origin from the mixture of air with liquids of different tenacity, they may be considered as only different degrees of the same rale, depending on their situation. 'Thus,' says M. Andral, 'we hear "gargouillement" in large excavations, the mucous rale in the larger bronchial tubes, in the smaller a rale between the mucous and crepitating; and finally, the crepitating rale as characteristic of inflammation in the smallest bronchial ramifications, and in the air cells of the lung. These varieties of the same sound may be termed the cavernous, the bronchial, and the vesicular rales.'

"The mucous rale is met with in all diseases of the lung, in which there is an increased secretion from the mucous membrane of the bronchial tubes, it is therefore characteristic of pulmonary catarrh in its advanced stage. It also occurs in pneumonia; in the first stage, where the disease is terminating by resolution; in the second, where there is an accumulation of mucus in the large bronchial tubes; and in the third, or suppurative stage, where an abscess is beginning to be formed. In the advanced stages of phthisis, where softening of the tubercles has taken place, it constitutes the proper 'gargouillement' of the French

authors; which occurs when there exists an excavation half filled with fluid matter, and communicating with the bronchial tubes. This 'gargouillement' is heard on the surface exactly corresponding to the excavation; and although in this case we cannot hear it with the naked ear, yet under the cylinder it is often as distinct as the rattle in the throat of a dying person. This sign announces the existence of an excavation in a manner almost as certain as pectoriloquism, and often makes its appearance some days before the latter symptom becomes completely evident. When this variety of mucous rale is not very distinct, it cannot alone constitute a pathognomonic sign of the softening the tubercles, or the formation of a cavity, because partial pulmonary catarrh may sometimes present the same phenomenon, but when strong and permanent in the same place, it is never equivocal.

"When the tubercular mass is softened to its greatest extent, there is often heard, instead of the rale, a manifest fluctuation. In this case, when the patient speaks or coughs, there is frequently heard a metallic sound, to be described hereafter.

"In some cases, the rale resembles the sound produced by the liquid coming from a bottle completely inverted. This sound is only heard momentarily, and appears to M. Laennec to coincide with the existence of numerous anfractuous excavations, communicating with one another by canals of some length and small diameter."

Next follows the pathology of pneumonia, from Laennec, Bayle, &c. and two cases of the disease, from Andral and Lenormand, illustrative of the use of the stethoscope; but after what we advanced in our Review of Forbes, we cannot suppose that these could much interest our readers. The next subjects are œdema of the lung, and pulmonary apoplexy, with cases from Laennec. Such are the diseases indicated by the crepitating and mucous *rales*.

"The SONOROUS *rale*," says Dr. Stokes, from Collin and others, "consists of a sound, sometimes extremely distinct, which resembles the snoring of a person asleep, or the tone of the bass string of a violin when struck with the finger. It sometimes, also, is similar to the cooing of a turtle-dove, but may have a more acute character. It appears to arise from the narrowing of the bronchial tubes, caused by determination of blood to the mucous membrane lining them, or from any other change in the form of those canals. It may perhaps arise from the thickening of the minute projections of the mucous membrane which are observed at the divisions of the large bronchial tubes, and called '*eperons*' by the French anatomists. The pressing of a tumour, or hepatization of the lung, will also produce it; and it not unfrequently occurs from inspissated mucus lining the bronchial tubes.

"We must be careful not to confound this rale with the guttural sound produced during sleep; the first has its seat in the chest, and is not heard by the naked ear; the second, on the contrary, is solely derived from the manner in which the air inspired and expired strikes the

velum of the palate. By means of the stethoscope, it is easy to perceive that it does not take place in the cavity of the chest.

"The sonorous rale is the pathognomonic sign of acute bronchitis.

"In pneumonia, accompanied by bronchitis, we have the sonorous and crepitating rales complicated. In the dry pulmonary catarrh, or asthma, the sonorous and hissing rales are met combined. The first varies little; the second is of great mobility, disappearing for a greater or less time, in consequence of coughing, or without any perceptible cause; and then returning suddenly and with a different intensity. Sometimes both are constant, distinct, and accompanying the greatest part of the organ. The catarrh is then extensive and violent.

"In the humid variety, the same phenomena may exist, but ordinarily they are complicated with a third, namely the mucous rale; which becomes entirely predominant after the acute stage is past, and thus characterizes the disease."

The account of this *rale* is followed by the pathology of pulmonary catarrh, from Laennec, Andral, and Beclard, with a case from Andral.

"The HISSING *rale* resembles," says Dr. Stokes, &c. "a prolonged wheezing sound, and accompanies either the end or commencement of inspiration or expiration. It may be grave or acute, dull or sonorous. These varieties may be met with in different parts of the chest, or may occur together in the same point at greater or less intervals. This rale is sometimes of very short duration, and has been compared, by M. Laennec, to the cry of young birds—to the sound produced when two pieces of oiled marble are suddenly separated, or to that proceeding from the action of a small valve.

"The hissing rale is owing to the presence of a scanty but viscid mucus, obstructing more or less completely the small bronchial ramifications, through which the air is obliged to pass, before it reaches the vesicles. When it is heard over a considerable portion of the lung, respiration is very laborious. It is during the existence of this rale that we observe the sputa presenting an arborescent appearance, resembling the form, calibre, and ramifications of the minute bronchial tubes, from which they have been expelled by the efforts of coughing.

"The principal affections in which the hissing rale is heard, are emphysema of the lungs and the chronic pituitous catarrh of M. Laennec. In the acute species of catarrh it occurs, complicated with the sonorous and mucous rales.

"In emphysema the respiration is not heard over the affected part, while the chest sounds well or even louder than natural on percussion. A slight hissing rale is heard from time to time, at the points corresponding to the affected part."

We have, following this, the pathology of the emphysema of the lung, in which we see the names of Graaf, Ruysch, Bonnet, Morgagni, Van Swieten, Storck, and Baillie: the names alas, and nothing more! The sole contributor is Laennec.

The phenomena of the voice next occupy the attention of Dr. Stokes; and here all that he says on the natural phenomena, and on the pathological phenomena, *broncophonia, pectoriloquism, metallic tinkling*, and *egophonia*, is pilfered from Collin, as may be seen by consulting Ryland's translation, p. 17, 18, 26, 27, 29, 30. 31, 32,

After broncophonia and pectoriloquism, Dr. Stokes favours us with the pathology of phthisis, from Bayle and Laennec. At this time of day, none of this can be of the least interest to our readers.

Pneumo-thorax follows metallic tinkling, and under this head Dr. Stokes introduces the succussion of Hippocrates, taken word for word from Collin, and without acknowledgment. It is illustrated by a case from Laennec.

After egophonia, we have the pathology of pleuritis, acute and chronic.

"We should expect," says Dr. Stokes, "to find egophonia occurring at the same time in different parts of the chest, when several circumscribed pleurisies exist, and this is actually the case. Here the usefulness of the stethoscope must strike the most ignorant or prejudiced observer, as it points out the seat of the disease with the utmost certainty, and directs us in the application of our most powerful topical remedies."

"In the annexed case, the progress, diminution, and disappearance of the pleuritic effusion were pointed out by the stethoscope, in the most satisfactory manner. It was mentioned before, that egophonia only occurs when there is but a small quantity of liquid effused between the pleura; accordingly, it was not present when the patient entered the hospital, as the disease had then continued for some days, and the effusion was already considerable. This was proved by the dulness of sound on percussion, and absence of the respiratory murmur. But as his recovery made progress, egophonia became evident; with its diminution, the respiratory murmur increased, until the egophonia totally disappeared, and convalescence ensued.

Case 11.—A servant, aged 24, of a weak constitution, was seized on the 16th of March, 1822, with a pain of the side, below the left breast, for which he could assign no cause. This pain continued for some days, but he paid no attention to it, and continued to work at his usual occupations till the 22d, when it became more severe, with a dry cough and oppression. Next day he entered the hospital, and was immediately bled.

"24th. Face pale, expressive of great anxiety; inspirations short and frequent; oppression; dry cough. Pain below the left breast, which is increased by percussion, intercostal pressure, cough, and the respiratory motion.

"The sound on percussion is dull on the left side, *laterally and pos-*

teriorly. Respiratory murmur inaudible in these situations. Anteriorly it was heard feebly, but everywhere else very distinct. No egophonia. These symptoms announced the existence of an effusion in the left pleura, which, in fact, had commenced on the 22d, and was now so considerable, that egophonia could not be perceived. The patient lay on the right side. Pulse frequent. Tongue white. General sweating. Constipation. He was bled and leeched. Blood not buffy. Syncope during the operation.

"25th. Pain of side has completely disappeared. He lies on his back. Other symptoms as before. He was bled to eight ounces, and on the 26th, a large blister was applied over the left side.

"27th. Respiration less laborious. He thinks himself better. Egophonia is heard for the first time, on a level with the inferior angle of the scapula. A remarkable quantity of serosity flowed from the blistered surface. Sweating abundant in the evening.

"From the 28th to the 4th of April, the egophonia continued; the dull sound on percussion diminished, and the respiratory murmur began to be heard; but still much more feeble than on the right side. Respiration less laborious; pulse much less frequent; sweatings each evening.

"On the 4th of April, the pulse was without frequency. A fourth of the usual hospital allowance was now granted for the first time.

"5th. Respiration more laborious. Pulse again frequent. The allowance was discontinued.

"6th. Symptoms as on the 4th.

"On the following days the sweating ceased. Strength re-established. Slight cough, and little oppression. After the 12th of April, egophonia was no longer heard; still, however, the respiratory murmur was weaker on the left side. From the 20th, respiration was heard equally on both sides. Dismissed on the 28th."

In certain cases of chronic pleuritis, every symptom is so very much obscured, that the disease may be termed *latent;* and it is in those that the stethoscope is of invaluable assistance.

This part of the subject is closed by some observations on the measurement of the thorax, which, as may be seen by consulting Ryland, p. 39, are extracted almost *verbatim* from Collin. His anxiety, however, to conceal his original, must be apparent to a very superficial examiner.

In describing the natural phenomena of the heart, it is M. Collin who speaks in the words of Dr. Stokes; as may be seen by referring to Ryland, p. 18, 19, 20. In the most part of the pathology of the heart, the author has compiled from Collin, Corvisart, Bertin, Laennec, &c., and he has in several places mentioned the names of these authors. From that part we shall extract a single passage regarding the pulsation of the heart, for the sake of contrasting it with the parallel passage in Ryland;

which will enable the reader to form a judgment of the two translations.

STOKES.

"The extent of pulsation may either pass its usual limits, or be confined to an unusually small surface.

"Auscultation teaches us that the following is the order in which the augmentation of extent usually proceeds; it first occurs over the whole anterior part of the left side; secondly, over the same space on the right side; thirdly, over the left posterior part of the chest; and, fourthly, (but which rarely occurs) over the right posterior part. The intensity of sound diminishes also in the above degree.

"The possibility of hearing the pulsations of the heart, in these different regions, generally indicates a state of debility of that organ, as a thinning of its parietes, or passive dilatation of some of its cavities.

"It may also arise from causes foreign to the state of the heart, and whose action is either temporary or permanent; such as emaciation, contraction of the chest, induration of the lung, the existence of excavations with firm parietes, pneumo-thorax, pleurisy, nervous agitation, &c."

RYLAND.

"The extent of its pulsations may exceed their natural limits, or be confined to a very small surface.—The increase of extent in which the pulsations become evident, is usually in the following order: 1st, The left side of the chest, from the axilla to the region corresponding to the stomach; 2d, The right side in the same extent; 3d, The left posterior part of the chest; 4th, Lastly, but rarely, the posterior part of the right side. The intensity of the sound is progressively less in the succession indicated.

"The possibility of hearing the heart in these different regions, always indicates a state of weakness of the organ, a small degree of thickness of its walls, particularly of the ventricles; the passive dilatation of some of its parts.

"It may also depend on causes not connected with the heart, the action of which may be either permanent or temporary; such are the thinness or narrowness of the chest, hepatization of the lung, its compression by effused fluid, the existence of excavations with firm walls, pneumo-thorax, nervous agitation, an intense fever, palpitation, hemoptysis, and, in general, all the causes which increase the frequency of the pulse."

In an appendix to his work, Dr. Stokes has given a very distinct account of the gangrene of the lung, and he has here had the good sense to acknowledge his obligations to Bayle, Laennec, and Andral. If he had done this upon all other occasions, we should have been spared the necessity of reproof. The appendix contains also an abridged translation of Andral's thesis on expectoration, as it appears in pulmonary catarrh, pneumonia, pleuritis, phthisis, emphysema of the lung, and œdema of the lung.

The following passage, under the head of the expectoration of pulmonary catarrh, is, perhaps, worthy of being extracted:—

"There sometimes occur, mixed with the expectoration, small grains of a whitish colour, which do not come from the lungs, but are secreted by the numerous glands in the pharynx, &c. This remark is of importance, as these grains have been mistaken for the debris of pulmonary tubercles."

When the *sputa* of a pneumonic patient are retained in the air passages, the case is always a severe one. "But," says M. Andral, "when the patient no longer expectorates, on account of the secretion from the bronchial membrane being put a stop to, we must be careful not to form any prognosis, without considering all the other symptoms. We have sometimes seen patients labouring under the most intense pneumonia, suddenly cease to expectorate, without any injurious result being the immediate consequence; in these cases, however, the recovery of the patient generally took place in a very slow manner." From the appearances of the sputa, of acute pneumonia, we are able to form *probable* conjectures only concerning the progress or termination of the disease.

M. Andral has seen several instances of pulmonary phthisis, where the disease went through all its stages, where, even after death, large excavations were found in the lung; and in which, notwithstanding the expectoration, furnished no diagnostic sign whatever. In support of this singular fact, I shall quote the following cases:—

1. "A young woman, labouring under violent cough and dyspnœa, remained for three weeks in the hospital, with evident pectoriloquism in the antero-superior part of the right side of the chest. Her expectoration, however, was all through purely catarrhal, and composed of a colourless, transparent, and thready mucus, adherent to the edges of the vessel by long striæ, some of which were opake. After death, large excavations were found in the right lung, half filled with an ash-coloured liquid, through which there floated small grains of a dull white colour. Both lungs were studded with tubercles, most of which were still crude.

2. "A young man, presenting every symptom of phthisis in its last degree, with pectoriloquism, at the sub-spinous fossa, had habitually but a trifling expectoration, similar to that of acute catarrh arrived at its last period. It was composed of a greenish yellow, thready, homogeneous mucus, mixed with air and saliva. During the six weeks that he remained in the hospital, his expectoration was mixed with striæ of a dirty reddish colour, which appeared to be derived from pulmonary excavations. Upon dissection, we found the right lung entirely studded with miliary tubercles, of which some were also seen in the left pulmonary organ. At the superior part of the right, was a cavity capable of containing a large walnut, and completely empty.

3. "Upon opening the body of a woman, who had sunk under a chronic diarrhœa, we found at the superior part of both lungs several small cavities, which communicated with one another, and were filled with softened tuberculous matter. Into one of these a large bronchial tube opened. But it is extraordinary, that during this woman's stay of three weeks in the hospital, she never expectorated at all, nor complained of any morbid symptom in the side of her chest.

4. "A young man sunk under peritonitis, which supervened on a chronic enteritis. He stated that he never coughed, and the expectoration was wanting. After death an empty cavity, capable of containing an apple, and lined by a thin concrete purulent matter, was found at the top of the right lung. Several smaller excavations, communicating with one another, and equally empty, were found on the same side. The rest of the lung contained many crude tubercles.

"In this case, did the excavations, once emptied of their tuberculous matter, cease to produce any new secretion? Was the secretion in the lung suspended by the abdominal affection?"

We have thus terminated our Review of Dr. Stokes's compilation, which we are warranted in pronouncing a most ingenious piece of literary patchwork, or of barefaced plagiarism; for while he has appropriated almost the whole of M. Collin's little work, he has quoted it only once: and only three times, we think, has he mentioned casually the name of that author. We know nothing of Dr. Stokes, nor of his publishers, but were he a friend or a relation, we would reprobate his conduct, we would strive to strip the jackdaw of his borrowed plumes. Yet while we express ourselves thus strongly, we willingly allow that his work, as a compilation, possesses some merit; and that his style is in general perspicuous, and, on some occasions, even elegant. But, when we look at the mechanical part of the volume, we cannot say, materiam superabat opus; for the paper and printing are decidedly superior to the literary part of the performance.

In Dr. Ryland's work, the paper, printing, and translation are decidedly upon a level; and we think Dr. Ryland has great merit in thus adjusting his plastic effort to the materials. His translation acts as a foil to that of Stokes. It is indeed below criticism. The French words *phlegmacy* and *tissue*, with many others, are occurring almost in every page, and the structure of nearly all the sentences is French. His work, however, has a drawing of the stethoscope, which the other wants.

We take the opportunity of here noticing, to condemn it, the practice so prevalent at present, of adopting French words, or French idioms, when the copiousness of our own language renders such a practice altogether unnecessary. Why should *tissue* be preferred to *texture*, or *phlegmacy* to *inflammation?* Even ur best authors are not free from this folly. But many of our

English words are undergoing a kind of degradation; for instance, we find Dr. Stokes writing *pathognomic* for *pathognomonic;* and it is not he alone whom we have found doing so. Such a practice should be reprobated.

ART. II—*Recherches Anatomico-Pathologiques sur la Phthisie,* Par. Ch. A. Louis, M.D., &c. &c. 8vo. pp. 600. Paris, 1825.

When we see a new book on pulmonary consumption, we are much inclined, from the utter hopelessness of the disease, to consider it as an unnecessary work; but the present composition of M. Louis must be viewed in a very different light. It is valuable on many accounts, but on no one more than on this, that it has forcibly called the attention of the profession to those accessory symptoms, which occur late in the disease, and which often are a source of infinite distress to the unfortunate patients. Medical men (and would that in this respect we could think ourselves guiltless) are apt, in the latter stages of the disease, to become remiss in their attendance upon phthisical and other patients thought to be incurable; but our conduct should be far otherwise, for we may often alleviate if we cannot cure; and even to the dying, alleviation is of some moment.

The work is founded on observations made at the Hospital of La Charité, where M. Louis, to the neglect of other practice, attended for several years and watched the phenomena of phthisis, with the same care which he would have bestowed upon a disease little known. He seemed, indeed, to neglect nothing worthy of being noticed, and was as attentive to the collection of negative as of positive facts. Negative facts in M. Louis's opinion, are of great importance; as organs, which after death have been found eminently diseased, have frequently given no indication of their being so affected during life; a circumstance which could not have been verified, had no notice of it been taken in the previous history of the disease.

The author also noted with great care the intellect of his patients, that he might be satisfied how far he could rely upon their statements; and in interrogating them, he was careful so to frame his questions as to obtain correct answers.

His dissections were conducted with the most scrupulous

accuracy. The brain was the only organ he examined *in situ;* the other organs he not only removed from the body, but deprived them by repeated washings of all adventitious matters, or even steeped them for an hour or two in water. The thickening of textures he paid particular attention to; but mere redness he looked upon as a matter of far less moment, unless accompanied by a change of texture.

Truth, we are assured by M. Louis, has been his guide in every one of his researches; and these have been founded upon the treatment and examination of one hundred and twenty three cases, fifty of which are actually detailed in the work before us. The work is divided into two parts, the first consisting of the pathological anatomy, the other of the symptoms; and at the end there is a short detail of the kind of treatment employed.

It is to tuberculous phthisis that M. Louis has turned his sole attention. "For the three years," he observes, "which we have passed in La Charité, we found no subject, dead of phthisis, whose lungs did not exhibit a greater or less number of tuberculous excavations, tubercles, or grey semi-transparent granulations; so that with us, as with M. Laennec, the existence of tubercles in the lungs is the cause, and constitutes the proper characteristic of phthisis."

M. Louis found that tubercles were almost always in greater number, of greater size, and farther advanced in their progress at the summit than at the basis of the lungs; for in one hundred and twenty three cases of phthisis, he met with only two exceptions to this rule. The tubercles were accompanied by those small bodies, named grey semi-transparent granulations, which were various in their appearance, and occurred of a larger size and in greater number at the summit than at the base of the lungs. They were found at the summit, even when they did not exist in other parts of the lungs.

"At a certain period of their existence, they showed a yellow and opake point at their centre; and this point was large in proportion as it approached the summit of the lungs; so that in examining those organs from the bottom to the top, we met with the following appearances in succession: grey semi-transparent granulations; granulations dark and somewhat yellow internally; and granulations of a yellowish white in their whole consistence, or what may be termed completely tuberculous. These last, for the most part, were the only ones observed at the summit of the lungs."—p. 3.

Tubercles, or semi-transparent granulations very seldom appear separately in the lungs; so that we may deem it an incontestible fact that the first are always a sequel of the second, or

that the one is transformed into the other. The granulations often appear in groups, though generally they are scattered in an unconnected manner. From the size of a millet seed, they may increase, probably, to that of a small pea in the course of three or four weeks; but in many cases they have certainly continued for years of their smallest size. M. Louis has found them in other organs as well as in the lungs; and there likewise they appeared to him to be susceptible of the tuberculous transformation. He also found granulations, and grey matter in mass, at the surface of the lungs immediately under the pleura. He likewise met with a gelatinous matter in the lungs of consumptive patients, of a pale red colour, less firm, but more transparent than the ordinary grey matter.

It was observed, that the tubercles seemed to show a preference for the summit of the lungs; and in fact the whole superior lobe has been found transformed into excavations, and into a grey or tuberculous matter, impermeable to the air in its whole extent; whilst, at the same height in the inferior lobe, a part of the pulmonary parenchyma was always found capable of supporting respiration, and rarely containing tuberculous excavations. It would seem also, that the left lung is more favourable to the production of tubercles than the right. In the opinion of M. Louis, inflammation has no share in producing tubercles; yet M. Chomel informed him of some cases where a part of the grey matter of the upper lobe of the lungs appeared to be the effect of chronic inflammation.

Once only, our author met with encysted tubercles. They were at the top of the superior lobes, and were easily separated from the surrounding texture.

The softening of tubercles took place at very different periods; in some cases so early as the twentieth day; but in others, much later. In some instances it occcurred simultaneously over an entire lung.

The tuberculous excavations, whether they were great or small, of recent or of ancient date, communicated with the bronchia by a certain number of openings; the mucous membrane of the one, and the adventitious membrane of the other, being intimately united at the entrance of the excavation. We cannot suppose such excavations to take place without the destruction of a part, at least, of the pulmonary texture. In the greater number of individuals they were found in both lungs; but in that case their size was different, being larger in one lung and smaller in the other.

When M. Louis speaks of a vast or large excavation, he means one of the size of a goose egg, or somewhat larger;

by a middle sized one, he means one equal in bulk to a rennet apple; while he compares a little one to a small nut.

"The matter of recent excavations was thick and yellow, bearing a resemblance to ordinary pus; but in those of ancient date, and particularly in those which contained rugged and winding passages without an adventitious membrane, the liquid was somewhat green or grey, of a dirty and disagreeable appearance, thin, moderately coherent, and sometimes stained with blood, or even very red. The latter colour, however, must have come on towards the approach of death." —p. 21.

In place of air or pus, M. Louis once found a middle sized tuberculous cavity containing a fibrinous organized matter.

"It was of a red colour, and sufficiently coherent; it was wrapt in a false membrane, of a white colour and brittle texture; this membrane adhered loosely to the membrane of the cavity, and sent forth a great number of septa, which all became united at a central point. Vessels were found round the excavation, and in the middle of the grey substance; their diameter equal to a millimetre, or rather less."—p. 25.

M. Louis is inclined to think that it was formed late in the disease.

In the course of his researches, our author observed another fact no less curious; a piece of pulmonary texture, to appearance quite perfect, was found inclosed in a cavity, but in no way connected to its sides. The subject was a delicate female in her twenty-seventh year.

"The right lung at its summit shewed a middle sized excavation, partly filled with a muddy and greenish fluid, in the midst of which was a body of a light grey colour, rayed, like the pulmonary texture, with black lines; it was oblong, somewhat flat, and was sixteen lines long by ten broad; it was light, soft, rather elastic, and inwardly was slightly tinged of a rose colour; in a word, it had a strict resemblance to a piece of lung of the same size, which had been steeped in water for some time. It had not a bad smell, and no pedicle could be detected on its surface. The excavation was lined by a false membrane of moderate consistence, a quarter of a line thick, and resting upon the sound pulmonary parenchyma. It shewed, at two opposite points, two elevations about a line each, formed by the extremity of two bronchial branches. In the rest of the lung there was some slight infarction, but otherwise it was quite sound."—p. 32.

M. Louis thinks that the piece of lung had been connected with the rest of the pulmonary textures, by the two elevations above-mentioned; and that its separation had taken place not long before death. The lungs of this patient were no otherwise diseased, but the cervical glands were in part tuberculous, a thing never seen except in the phthisical.

Sometimes the mucous membrane of the bronchia preserved its natural whiteness in the vicinity of tuberculous cavities; but for the most part it was of a bright red; and this redness seemed to be occasioned by the constant passage of purulent matter from the excavations into the bronchia; for it was rarely, if ever, observed in the neighbourhood of masses of grey matter, or of tubercles not suppurated. With redness, it also sometimes became thickened; and the thickening was always most marked at the summit of the lungs.

Inflammation of the pulmonary parenchyma was by no means of rare occurrence; but the characteristics of the injury showed it to be of recent date; in many instances, only a few days before death. The same thing has been observed in other chronic diseases. It would appear from this, that tubercles and tuberculous excavations have little or no effect in producing peripneumony when it occurs in the last stage of phthisis.

Adhesions of the lungs to the pleura, were very common; for in a hundred and twelve individuals, M. Louis found only one whose lungs were perfectly free in their whole extent.

"These adhesions were formed by means of a cellular texture of various density, or by an adventitious membrane, and then vast excavations were almost constantly present. Adhesions were thus always proportioned to the disorder inside; for if there were no adhesions, there were no larger or middle sized excavations, and frequently, indeed, no kind of excavation whatever."—p. 40.

Adhesions were the consequence of chronic inflammation, the date of which might generally be known by attending to the patient's symptoms.

Like peripneumony, *pleurisy* took place in a great number of individuals, during the last days of life, when debility and emaciation were extreme, M. Louis observed it in the tenth part of his patients. These two diseases were sometimes the sequel of an evident cause, such as a slight cold applied to the surface of the body, but more commonly no cause could be assigned. They were frequently accompanied by effusion.

The epiglottis, larynx, and trachea, are the next objects which fall under the attention of our author. Ulcers of the larynx, he observes, have been often noticed in phthisis; but those of the epiglottis have been passed over entirely, and those of the trachea have been hardly mentioned. Ulcers of the epiglottis are by no means rare among the phthisical, occurring almost as often as those of the larynx.

When the mucous membrane of the trachea is ulcerated, it is ordinarily of a bright red colour; and is sometimes thickened. The ulcers are found most frequently in the lower half of the

trachea. Even the muscular coat was sometimes ulcerated and thickened; and the cartilaginous rings were sometimes laid bare. M. Louis imagines that these ulcerations are occasioned by the purulent discharge from the lungs. If so, how happens it, that patients will discharge pus from the lungs for a length of time, and ultimately recover, without ever having complained of pain in the region of the trachea?

The larynx was ulcerated in the fourth part of the patients. The form of the ulcers was irregular; they had some depth, and their extreme length and breadth were about an inch.

The epiglottis was seen ulcerated in about a sixth part of the cases. The ulcers were not so deep as those of the larynx; and sometimes their colour was of a pale red. Nearly all of them were seated on the laryngeal side of the epiglottis In one instance there was a complete destruction of the epiglottis. No tuberculous matter was ever observed on the trachea, larynx or epiglottis; their ulcers are consequently attributed by M. Louis, to inflammation, occasioned, as we have said, by the pulmonary pus. Ulceration of these parts were much less common in women than in men. From data that may be depended on, our author has drawn the inference that they are peculiar to phthisis.

The next object of the author's attention, is the apparatus of the circulation. Here he observes, that phthisis cannot be admitted as a cause of aneurism of the heart; facts being decidedly against such a supposition. The heart, indeed, was generally smaller than usual; and it was not destitute of firmness. The pericardium adhered to the heart only in two cases. In almost all cases, the aorta was quite sound, and in a great number it had a certain degree of redness. In some elderly subjects, however, there was a tendency to ossification.

In the apparatus of digestion, the pharynx and œsophagus were, for the most part, in their natural state; only two cases of each having been observed where they were ulcerated, and the mucous membrane a little thickened, sometimes, however, the epidermis of the œsophagus had disappeared.

In its size and position the stomach was considerably altered. In nine out of ninety-six patients, it was double or treble its usual size, and had descended below its natural situation. In all those cases the liver was very large, and was depressed in the same proportion as the stomach. It is very seldom that the stomach undergoes such changes in any other disease than phthisis.

"The morbid changes in the stomach were principally connected, with its mucous membrane. It was softened and had become thin

and sometimes it was never destroyed in certain subjects; in others it was more or less of a red colour, and thickened on its anterior side; or the redness, accompanied by a very marked softening, was observed only in the blind sac of the greater curvature. Ulcerations were met with in some cases; and in other cases the mucous membrane had a very remarkable papillary appearance."—p. 62.

M. Louis thus speaks of the first of those changes—

"The cellular texture placed under the thin and softened mucous membrane, was commonly sound. In four cases only, had the membrane lost all its firmness, the slightest pull being sufficient to tear it; and the muscular and peritoneal membranes corresponding to it had undergone the same alteration. Thus, we have frequently found the stomach perforated, though it had been separated with the greatest care from the neighbouring parts, and though the absence of effusion shewed that the perforation had not existed during life."—p. 64.

We have seen the same thing in two chronic cases; the one scrofulous, and the other schirrus of the pylorus. Such a state M. Louis believes to be the result of inflammation; and we may observe, that in our cases, vomiting was a most distressing symptom some time before death.

Only in *nineteen* cases out of ninety-six, was the mucous membrane of the stomach found comparatively in a state of health. The morbid changes that appear in the stomach of phthisical patients, are found also in other chronic cases; but in a much less proportion.

The duodenum was almost constantly in a healthy state; not only in phthisis, but in other diseases of long standing. In sixty consumptive cases, M. Louis met with three, in which it was ulcerated, and one in which there was a fibrous tumour, of the size of a filbert, in the muscular coat.

The author has given a very minute account of the small intestine in its natural state, and we regret that we have not room for its insertion here; but we may mention, that its thinness and semi-transparency are its most striking features, and that when any of its textures are altered, this semi-transparency disappears. The mucous membrane is naturally white, and in general it is of uniform consistence; but its uniformity is interrupted at distances more or less considerable by plates of a form somewhat oval, and of very various dimensions. In the whole intestine there are from twenty to thirty, and often more. On their surface may be observed a great number of grains smaller than millet seeds, of a white or pale yellow colour; and in the insterstices of these grains, the mucous membrane may be seen thin and transparent. This structure, which it is not always equally easy to ascertain, is of the very utmost im-

portance in some pathological cases; for example, when the mucous membrane is of a dark red after diseases of the heart. Then, indeed, the small grains we have spoken of preserve the white and pale yellow colour which is natural to them; their interstices, the redness of which is almost as dark as that of the surrounding mucous membrane, make them come forward in a very striking manner; and the plates appear to be what they really are, an agglomeration of small glandular grains, in the substance of the mucous membrane. In severe fevers, when the mucous membrane, is little altered, these glandular grains are thickened and enlarged; and in phthisis they are generally the seat of ulcers; and in acute diseases of perforation.

In the small intestine, M. Louis observed numerous morbid changes; such as softening, thickening, redness of the mucous membrane, small sub-mucous abscesses, semi-cartilaginous or tuberculous granulations, and ulcerations.

"The granulations sometimes appeared with all the attributes of tuberculous matter; sometimes they were much harder and whiter, and shewed in some respects the firmness and appearance of cartilage. Neither of them were of large size, seldom exceeding the bulk of an ordinary pea, and often being much less. They began under the mucous membrane, and almost never appeared unless there was ulceration at the same time."—p. 82.

The semi-cartilaginous granulations were sometimes seated upon the plates, but more commonly in their interstices. They were distributed over all the circumference of the intestine, but they never occupied the insterstices of the muscular fibres. M. Louis, therefore, thinks that they are merely enlarged mucous glands. Tuberculous granulations were always less numerous. They were followed by ulcers analagous to the tuberculous excavations of the lungs; and then inflammation of the mucous membrane was present; the effect, as M. Louis observes, and not the cause of tubercles.

M. Louis will not allow that any of the perforations of this intestine, met within phthisis, existed during life.

Sometimes there were small ulcers of the size of a pea, which had their origin in the sub-mucous cellular texture, and seemed to be the consequence of phlegmonous inflammation. They were never met with but in phthisical cases. Indeed, the small intestine is hardly ever ulcerated, but in phthisis.

If we except the semi-cartilaginous granulations, the morbid appearances were the same in the great, as in the small intestine. In rather more than a fourth part of the cases, the mucous membrane was *red* in its whole extent; and it generally coincided with a remarkable *softening* of the membrane. In

several cases it was thickened, and in most of them ulcerated. In two cases it was entirely destroyed to the extent of ten inches—but when it is completely softened, merely coming over it with the back of a scalpel is sufficient to remove it entirely. When redness and thickening are joined to softening, there can be no doubt that the latter is the effect of inflammation. But redness alone tells nothing; it is to the thickening of textures that the observer should pay most attention. Softening (ramollissement) is often present, as in the heart and spleen, without our being able to assign inflammation as its cause.

In about an eighth part of the cases there were tuberculous granulations. They were placed in the centre of ulcerations, or round about them. Ulcerations were frequent, and in some cases, but for M. Louis' habit of washing the parts, they would have been difficult of detection on account of their very minute size. When they were very large, and when the muscular coat was laid bare, they frequently had a fœtid odour. In many cases at their commencement, according to M. Louis, the ulcers were independent of inflammation.

The lymphatic glands were found less frequently changed into tuberculous matter in the neck, the loins, the arm pits and meso-colon, than in the mesentery, where it was found in about a fourth part of the patients, in greater or less quantity; for all the mesenteric glands were not equally subject to this affection. In some instances it would appear that inflammation, of the lymphatic glands of the mesentery, and of the mucous membrane of the small intestine, and ulcerations in the latter, are a cause of mesenteric tubercles; but in other instances tubercles appear to be altogether independent of them.

"The fatty transformation of the liver was the most frequent, and most remarkable morbid appearance in this organ. It was met with forty times in a hundred and twenty patients. In this state the liver was pale, almost always of a light brown colour, more or less delicate and spotted (piqué) with red, both inwardly and outwardly. It preserved its natural form, but its size was generally much increased, being sometimes almost double what it usually is. This increase of size was, for the most part, at the expense of the great lobe; and then the liver covered a great part of the anterior face of the stomach, occupied the epigastrium, passed two or three fingers' breadth beyond the short ribs, reached the crista ilii and the spleen, which it sometimes even overlapped. In two cases we found it in the middle of the belly about two inches from the pubes. Its consistence, with a few exceptions, and only when the disease was not far advanced, was much less than in the natural state; it could be easily ruptured; and it was sometimes very soft."—p. 115.

This state of the liver is almost entirely confined to phthisical patients. It may take place very quickly; for it has been observed in cases where phthisis had run through all its stages in fifty days. In all these cases the liver was no otherwise diseased.

In a third part of the patients, the bile of the gall bladder was somewhat black, and of a consistence neither solid nor liquid; and the thicker it was, the less it was in quantity. This state of the bile had no connexion with the state of the stomach. The coats of the gall-bladder were seldom diseased; but in a few cases they were thickened; and in one of them the gall-bladder contained about two hundred gall stones.

The spleen was softened in a great number of individuals, and was generally either above or below its natural size. Tubercles were found in it, in about the sixth part of the patients.

In two cases M. Louis found tuberculous matter in the supra-renal capsules; and in the kidney in three cases; but no such appearance was ever observed in the urinary bladder.

In several cases the prostate gland was more or less tuberculated; in one case the *vesiculæ seminalis* and the *vasa deferentia* shewed a slight appearance of tuberculous matter from exhalation; and in another the interior surface of the uterus was similarly affected.

In many cases there was an effusion of serum in the peritoneum.

"Along with this effusion, we found at times a kind of *yellowish soft adventitious membrane*, or a certain quantity of thick inodorous *pus* like that of a phlegmonous abscess. This twofold state of disease, which existed in four subjects, could only be the effect of an acute peritonitis; and the symptom observed during life shewed that the inflammation had come on but a few days, or even a day, before death." —p. 141.

The author has seen several cases of tuberculous peritonitis. In one case, the great omentum and the meso-colon shewed a mixture of grey bluish matter, semi-transparent, and of a tuberculous nature. Here, he gives a very interesting case, where, in many parts of the body, the tubercles in advancing had kept pace with those in the lungs; which indeed is a very rare, if not a *unique*, occurrence.

M. Louis terminates this part of his subject with the following remarks:—

"As a sequel of chronic affections different from phthisis, we have seen several cases of effusion of serum into the cavity of the abdomen. With the exception of diseases of the heart, in which it is so common an occurrence, we have met with it sixteen times in seventy-seven

cases, to the extent of from one to six pints, that is, nearly in the same proportion as in phthisis. But in none of these cases did we meet with tuberculous peritonitis, or with semi-transparent granulations on the peritoneum, or in the substance of a false membrane adhering to its surface, which, with other facts, establishes an analogy betwixt tuberculous and semi-transparent matter."—p. 151.

The intellectual functions are rarely disturbed in phthisis, yet in pseudo cases of that disease the brain and its appendages undergo some morbid change. This perhaps may account for the false hopes, and the elevated spirits we sometimes observe in phthisis; and for the patient's ingenuity in so readily assigning a cause for most of the untoward circumstances which occur during the latter periods of his illness.

In the vicinity of the falx, in aged subjects, crevices were seen in the dura mater, which gave a passage to white, opake, or semi-transparent bodies, of a rounded form and homogeneous. These bodies had their origin from the superior surface of the cerebral arachnoid, and rarely from that which lines the dura mater; their size varied from that of a millet seed to that of a small pea; and they were in very close union with the arachnoid, which, as the place of contact, was more or less thickened. M. Louis calls them arachnoid granulations. They are probably the pretended glands of Pacchioni. In some other cases the arachnoid was opake and thickened, without granulations; we doubt the effect of inflammation which had taken place a few days before death. In five out of ninety-nine cases, there was a little clear or reddish serum in the upper cavity of the arachnoid, to the extent of from two to five tea spoonfuls. Much oftener, or in about the half of the patients, a few spoonfuls of the same liquid were found in the lower occipital fossæ; and as often as the vertebral canal was opened, even a greater quantity was found in it.

In about an eighth part of the cases the pia mater was more or less red, thickened and injected; and in one half of these the medulla of the brain shewed slight marks of inflammation. The effusion of serum in the lateral ventricles was in proportion to that in the arachnoid. The serum was for the most part limpid. In three cases there was about a tea spoonful and a half of serum in the fifth ventricle. In some subjects the substance of the brain was as soft as that of a new-born child.

The above morbid changes in the brain and its appendages are not peculiar to phthisis, but are found after other chronic diseases.

"The only alteration," says M. Louis, "which we have observed exclusively in the brain of phthisical patients, are hydatids and tuber-

cles. We do not consider hydatids as peculiar to phthisis; but every thing that has hitherto been said, leads us to believe, that this character appertains to tubercles."—p 158.

The author has given an account of the only case of hydatids of the brain which he ever met with. The intellect of this patient remained perfect to the last, he slept little, had no headache, and lost his strength very gradually.

"The dura mater adhered very strongly to the sagittal suture; there was no infiltration under the arachnoid. At the upper part and on the sides of the brain, there was seen under the pia mater a score of vesicles which rose above the circumvolutions about a line or a line and a half. The rest of their substance was sunk in the brain, which was perfectly sound all around them. These vesicles were of a rounded form, and their dimensions were various. Three of them were of the size of an ordinary nut, they were uniform on their surface, and shewed a kind of pedicle, from whence proceeded a whitish and opake membrane, which did not cover every part of the hydatid. The hydatid itself was found by a soft and thin membrane, which made water a little muddy. The other hydatids had the same structure, were a little larger, more opake, and more or less embossed; which last circumstance gave some of them the appearance of a mulberry. The brain was very much injected. The lateral ventricles, the tuber annulare and the cerebellum were in their natural state."—p. 162.

In the lungs of this patient there were tubercles and grey granulations; and on the surface of the mucous membrane of the small intestine, there were two ulcers, exhibiting miliary semi-transparent tubercles.

"Hydatids of the brain," says M. Louis, "form a fact of pathological anatomy of very rare occurrence; and at the time we met with the above case, M. Chomel had never seen an instance of it."

After giving a case, where tubercles appear to have been simultaneously developed, not only in the brain and lungs, but in many other organs, M. Louis remarks:—

"The development of the tuberculous matter was more advanced in the lungs than elsewhere, and that seems to indicate here, as in other cases of the same kind, that, relatively to tubercles, the lungs, so to speak, keep the rest of the body in complete subjection. The very few symptoms which tubercles of the brain occasion, is a circumstance also deserving some attention. Scarcely can we attribute to them the increase of headache at the time of the menstrual discharge, and the flushes in the face, in the above case, since the pain which appeared to be seated in the lymphatic glands of the neck might have occasioned them, at least in part. Besides, if we consider that the intellect remained entire to the last, and that motion of every kind remained free, it must be acknowledged, that if these were the immediate effect of

tubercles, it was a very slight one. At the same time we must allow, that if tubercles and hydatids, grow, so to speak, in a latent manner in the centre of the brain, the same thing may and ought to happen in the lungs; and no onewill be astonished, therefore, that there are cases of phthisis latent for a longer or shorter space of time."—p. 175.

We have now finished our Review of the first part of our author's work; and we have endeavoured, at the risk of being tiresome, to extract from it every thing worth knowing. We now enter upon the second part, which contains the symptoms, the causes, and the treatment of phthisis.

From the consideration of a great number of facts, M. Louis has endeavoured to show by what means we may suspect the approach of phthisis, or ascertain its existence when it is actually present. When there is a dry cough of some month's duration, when the patient is easily put out of breath in walking or speaking, when there is pain of greater or less extent in the back, or in the sides of the chest, when there is a loss of flesh and a diminution of strength, we have great reason to suspect the existence of tubercles in the lungs; and if there have been one or more attacks of hæmoptysis, we may be almost certain that the patient is phthisical.

"If in this first period," says M. Louis, "we employed auscultation, the respiratory noise did not appear altered, at least for the most part, especially when there were merely grey granulations. But in some patients, the breathing was weak under one or other of the clavicles; or at least in the same points, or in a limited space, there was a slight sonorous and mucous rattle, and the chest in that place yielded a more obscure sound than in the opposite side."—p. 182, 183.

The appetite was little impaired, and few of the patients were troubled with diarrhœa.

"In the second period of the disease," says our author, "the cough was generally more troublesome and more frequent than in the first, particularly during the night. The spits were greenish, opake, and streaked with yellow lines; they contained no air, and assumed a particular form, being rounded, and as it were jagged or torn. Sometimes, under the influence of regimen and diluents, they lost a part of their usual characters, but afterwards resumed them, at the end of a longer or shorter period. Within a few days of death, they not unfrequently had the appearance of a greenish or greyish pease-soup. Indeed, they were often accompanied with spits resembling those of the first period. Hæmoptysis was not uncommon, but for the most part it was inconsiderable. Dyspnœa made more or less rapid progress, according as the disease was acute or chronic. The pains were often more severe than in the first period. Sometimes, even, there were pleuritic symptoms of great intensity, which required a very active treatment. Almost always the patients lay with their heads low; their position

varied; but in some cases, nevertheless, they lay exclusively on the side opposite to the great excavations. In practising auscultation, pectoriloquism more or less perfect, and a gurgling sound, or tracheal respiration, were heard in one or several points corresponding to the summit of the lungs; and in the third part of the cases, percussion of the chest gave no sound under one or other of the clavicles, in a space commonly considerable. It was in this period, also, that the symptoms, dependent on ulceration of the epiglottis and larynx, and the various affections of the mucous membrane of the stomach, shewed themselves."

"In the greater number of the patients, the fever was of the continued kind with exacerbations. These took place in the evening, and commonly began with some degree of shivering, followed by heat and sweat. There was great thirst, except when the progress of the disease was very slow. The appetite was unequal, but gradually decreased as the patient became weaker; though, in some cases, there was a complete loss of appetite, even when the mucous membrane of the stomach was quite sound, or at least very slightly or recently diseased. In a few patients the stools were regular even in the last days of life; and in several, there was no diarrhœa, till within twenty or thirty days of death; but in most cases it began at a period very remote from that event. Emaciation made rapid progress, and unless something extraordinary, such as the perforation of the pulmonary parenchyma, happened to the patients, they died in extreme marasmus, generally preserving to the last the regular exercise of their intellectual faculties."—pp. 183-5.

In a hundred and fourteen patients, whose cases have been stated with all possible exactness, two tenths and something more died from the first to the sixth month of the disease; four tenths from the sixth to the twelfth month; rather less than the fourth part, from the first to the second year; and something less than the fifth from the second to the twentieth.

Age seemed to have no effect whatever in accelerating the disease; but sex evidently had; women being carried off in general much more rapidly than men. The mortality of the disease, compared to that of others, was found to be nearly as one to two.

M. Louis now goes over the particular symptoms, and has given a very detailed account of the matter of expectoration—and he thinks that in the latter period of the disease, the matter furnished by the bronchia and by the excavations is exactly of the same nature. Hæmoptysis, he observes, existed fifty-seven times in eighty-seven cases. Six had a marked influence on hæmoptysis, for in forty-two women thirty-six had spit blood; while in thirty-eight men, the same thing had occurred only twenty-one times. As it often took place without any known cause, and while the patients were apparently in perfect health, our author concludes that tubercles are altogether independent

of inflammation of the bronchia, and that they are the cause and not the effect of pulmonary catarrh. This opinion occurs repeatedly through the book. He will even hardly allow inflammation to exist while tubercles are forming or during hæmoptysis; and yet we have always observed that blood drawn from a vein at such times exhibited a buffy coat. Pain he attributes rather to inflammation of the pleura than to tubercles; yet he cannot deny its presence even in them. It must be confessed, however, that pain is seldom a severe symptom in phthisis. The author acknowledges also, that the principal, and often the only cause of the attendant fever, is an ulceration of the lungs, more or less severe; but he will not allow that inflammation has any effect whatever in producing sweat or profuse perspiration in phthisis.

M. Louis considers diarrhœa not so much a complication as a symptom of the disease; as in a hundred and fourteen patients, five only had never been affected by it. It may be viewed in two states, as existing in the latter days of the complaint, or at a period more or less remote from death. In the first state it commenced from the twentieth to the fifth day before death; and was found in the fourth part of the patients. In some it commenced with heat, shivering, and colic pains; and in all these cases, except one, the mucous membrane of the intestines was injured. *Diarrhœa of long duration* appeared under two principal forms; it was either continued or remittent. The first lasted from a year or more to one month; and the second from fifteen months to forty-eight days. The examination of the fæces in such patients threw considerable light upon the state of the intestines.

Emaciation began early, and it may often give evidence of latent phthisis. M. Louis thinks that it depends upon the alteration of the pulmonary parenchyma, by which the regularity of nutrition is impeded.

On the diagnosis of phthisis we are furnished with some pertinent remarks; but we must not stop to examine them.

Peripneumony may appear a few days before death, and, in spite of extreme marasmus, may be readily distinguished. The same may be said of pleurisy. It took place three, nine, eleven, and seventeen days before death, with an increase of dyspnœa and severe pains in one side of the chest. Even when it occurred earlier, it was seldom entirely dissipated.

In three cases of ulcerated epiglottis, the deglutition was impaired; although the pharynx and amygdalæ were in their natural state, and sometimes drinks were rejected by the nose. In

all cases there is a pain at the top, or immediately above the thyroid cartilage.

Of ulceration of the larynx, M. Louis thus speaks—

"Whatever was the variety of the ulceration, the symptoms were of the same nature; but they differed much in intensity and duration. Hoarseness was present in four-fifths of the cases. In superficial ulceration there was often no pain; but in the contrary case it was always present, and was more or less intense. The same thing was observed with regard to aphony: in slight ulceration the voice was little changed; but in such as was deep-seated, there was a loss of voice for one or several months."—p. 267.

Ulcerations of the trachea, even when very numerous, gave rise to no remarkable symptoms; but when there was *inflammation of its mucous membrane without ulceration*, the patients felt, in certain cases, a more or less acute pain, accompanied with heat, in the situation of the trachea; or they had pain in the throat and larynx, though these latter parts were quite sound.

When the mucous membrane of the stomach became softened and thin, the patients, often months before death, lost their appetite, and then experienced pain in the epigastrium, which was often very acute. A few days after, nausea and vomiting supervened in succession, or even sometimes preceded the former symptoms. Digestion had been impaired, in most instances, for years previously. The above state sometimes marked the phthisis. The matter vomited was almost always of a bilious nature; and the tendency to vomit was sometimes so great that even pure water was often instantly rejected.

M. Louis relates a case where the tuberculous affection of the lungs, and the disease of the mucous membrane of the stomach began at the same time, which is not common; and when death seemed rather to be the result of the stomach affection, than of any other cause. The patient's whole attention was taken up with her stomach, and she could hardly be prevailed upon to answer questions on the state of her chest. The same circumstance has been observed in other cases. Most of the above symptoms, however, have occurred in some cases where there was no morbid alteration in the mucous membrane.

Our author's attempts to detect other particular changes in the stomach by the symptoms, have not, in our opinion, been successful; but they deserve attention.

M. Louis will not allow that there is any connexion betwixt the state of the tongue and that of the stomach—

"For," he says, "if in certain cases it is red in gastritis, the contrary is still more frequent: and, on the other hand, it is sometimes

dry, hard, and very red, when the mucous membrane of the stomach is quite sound."—p. 344.

"In some cases the tongue was the seat of an *albuminous exudation,* of more importance to be attended to than simple redness. It made its appearance towards the termination of the disease, four, eight, ten, sometimes even sixty days before death; at one time in the form of plates, of from two to three lines of surface, which, uniting, sometimes covered the whole tongue; and, at another, under the form of small grains, like those of macaroni, separated by spaces of greater or less extent, in which the texture of the tongue was laid bare. It was about the thickness of half a *millemetre,* and could be removed with ease. It was commonly renewed several times before death. In most cases it appeared at once, on the tongue and the different parts of the mouth, the lips, the cheeks, the gums, and sometimes even on the roof of the mouth."—p. 346.

It was evidently the effect of inflammation of the mucous membrane of the tongue.

In speaking of the genital organs, M. Louis will not allow that the venereal appetite of the male sex is increased in phthisis. In women, he rarely found the uterus diseased, although the menstrual discharge had long ceased. He cannot say positively whether pregnancy has the power of retarding the progress of phthisis; but he is disposed to think that it has not; principally for this reason, that pregnancy produces dyspnœa, and dyspnœa is often the most troublesome symptom of phthisis.

With regard to cerebral symptoms, they were seldom met with, except in such patients as had a partial and pulpy softening of the brain, or traces of inflammation in the arachnoid, lining the two lateral ventricles, or in the texture immediately beneath. The principal symptoms were headache, partial convulsions, and alternate somnolency and delirium. In terminating the cases which illustrate this subject, the author observes,

"We have never seen apoplexy in the last periods of diseases which have lasted long; and this fact establishes a new line of demarcation betwixt softening of the brain and apoplexy; and it shows a new connexion betwixt hæmorrhage of the brain, and that of other organs, which is rarely observed in extreme debility."—p. 367.

We now enter upon that part of our author's work, where he considers the varieties of phthisis, relatively to its progress; and under this head he has detailed a great number of very interesting cases, first of latent and then of acute phthisis. Both of these states are deceitful in the extreme: and without great care on his part, they will almost to a certainty mislead the physician. In some of the cases of latent phthisis, tubercles have existed long before there was either cough or expectoration, or any general symptom worth noticing: and, in others,

they have given rise to very intense general symptoms; such as fever, emaciation, anorexy, &c., long before the supervention of cough or spitting. It is in such cases that percussion and auscultation may be of essential service in forming a diagnosis.

M. Louis has next furnished us with some valuable cases of acute phthisis, in one of which the disease ran through all its periods in thirty days.

The symptoms of perforation of the pulmonary parenchyma are, an *instantaneous* pain in that part of the chest corresponding to the perforation, accompanied by extreme dyspnœa, inexpressible anxiety, and all the general symptoms of acute pleurisy. The patients lived after the accident from twenty-four hours to thirty-eight days. In these cases, the pain corresponds to the irruption of tuberculous matter into the cavity of the pleura, and is caused by it.

We have next some cases of sudden death. In a part of these, death could be accounted for by the state of the organs; but in others, no plausible cause whatever could be assigned for it.

The cause of pulmonary tubercles, M. Louis confesses, are unknown. Irritation, in his opinion, has no share in producing them. One thing, however, seems certain, that the disease appears oftener in women than in men.

Dress, according to M. Louis, has no influence as a cause of phthisis; for, to say that it is occasioned by the use of stays or boddice, is merely an assertion without proof.—Of hereditary predisposition there can be no doubt; it has a powerful influence in the production of the disease.—With regard to age, a greater number of persons die of phthisis from twenty to forty years, than from forty to sixty.

The treatment employed by our author was simple, and varied according to circumstances. When the patient came to the hospital, if there was no fever and no complication in the chest, and if the digestive function was unimpaired, an infusion of lichen, a mucilaginous potion, and a small dose of syrup of poppy, were generally prescribed. When there was fever without inflammation, mucilaginous remedies and low diet were made use of; and if the disease had a more acute form, general and local blood-letting were not unfrequently employed. M. Louis confesses, however, that the latter part of this treatment was altogether useless, or at least only of momentary effect. Belladonna gave no relief, and in those cases occasioned a painful sensation in the throat. Pleuritic pains were combated by blood-letting and blisters. Sulphate of quinine was given in cases of *shivering*, with temporary relief. Acetate of lead, in

the dose of 12 to 15 grains a day, had no effect, except in one case, in checking *sweat.* In the diarrhœa of the latter stages of the disease, stimulants were hurtful. *Every patient died.*

In the treatment of the disease, there is not a word said of iodine, or hydrocyanic acid, or of tonic remedies; though the author states positively that tuberculous phthisis, in its simple state, is no way connected with inflammation.

We have left ourselves little room for general remarks on M. Louis' performance. Dr. Baron is not once mentioned, and yet we can trace, in several parts of the work, an approximation to his doctrines, and can scarcely believe that the author was unacquainted with them. Hydatids are described as existing in the brain, and the small semi-transparent granulations of the lungs and other parts, are something very like them. The author has put his work hurriedly together, and he is by no means a concise or an elegant writer; yet, he has a talent for observation, and many of his facts we could have confirmed from our own practice.

Art. III.—*Sketches of the most prevalent Diseases of India; comprising a Treatise on the Epidemic Cholera of the East; Statistical and Topographical Reports of the Diseases in the different Divisions of the Army under the Madras Presidency, &c.; and Practical Observations on the Effects of Calomel on the Alimentary Canal, and on the Diseases most prevalent in India.* By James Annesley, Esq., lately in charge of the General Hospital, Madras; and Garrison Surgeon of Fort St. George. pp. 464. Lond. 1825.

Mr. Annesley has here presented to the profession the most valuable work on the diseases of India, with which we are acquainted. It is well written, well arranged, and contains such a copious stock of important information, as to somewhat embarrass us in attempting to make an analysis of its contents; a task which the extent of the work contributes to render yet more difficult.

The ordinary symptoms of the epidemic cholera of India have been rendered so familiar to the profession in this country, by the descriptions of numerous writers, that we trust we shall be excused if we pass over the history given of them by Mr. Annesley, and proceed to notice, in the first instance, his pathological observations.

One of his first remarks on this point is—

"That although the solids presented but few derangements, and those not always of a very serious nature, yet the condition of the circulating fluid, as observed, both during the life of the patient, and on inspection after death, seems to me to be such as to account for many of the symptoms of the disease, and for their rapid progress towards a fatal termination."

In connexion with the pathology of the disease, Mr. Annesley gives a minute account of the morbid appearances which presented themselves.

In the head, the sinuses and veins of the brain and of its membranes, were always congested with black, thick, and viscid blood. The tunica arachnoidea was frequently opake, and somewhat thickened, and adherent to the adjoining membranes. Some gelatinous or serous effusion was often observed in the ventricles and between the membranes. The brain was sometimes soft and pulpy, but it seldom presented any very decided marks of increased action.

"The congestion of black blood and the serous effusion so often observed within the cranium, seem to account for the stupor, deafness, vertigo, and noise in the ears generally present during the life of the patient; and it was usually found that the lesions just alluded to were more marked in the cases wherein those symptoms were most manifest." —p. 118.

In the thorax and heart the great veins were frequently distended with thick black blood; the substance of the heart was soft and easily torn. The lungs were shrunk, heavy, collapsed, filled with black blood, and of a fleshy, hepatized or bruised appearance.

"The relation which these lesions bear to the derangements of the respiratory and circulating functions observed in the course of the disease, seems sufficiently evident. Whilst, however, I am ready to grant that a great part of these derangements was merely consequent on death; yet, I must contend, that much of them had taken place before that issue occurred; and that the depression of the vital energy of the organs, at the time of the invasion of the disease, gradually led to, and became accompanied by, many of the derangements which these organs presented after death."—p. 119.

On opening the abdomen, a peculiar offensive odour was sometimes observed. The stomach generally contained more or less of a watery, muddy, and sometimes a grumous fluid. Its mucous surface was sometimes covered by a dark coloured slimy mucus, and when this was removed, considerable congestion of the venous capillaries was observed. This congestion was seated in the sub-mucous cellular tissue, and was sometimes so extreme as to assume the appearance of ecchymosis. The

mucous coat was sometimes much corrugated, thickened, and doughy to the touch. When some degree of re-action had taken place before death, the inner surface of the organ, particularly about the pylorus, presented a livelier colour, approaching to red, and was thickened and contracted.

The state of the small intestines appears to have had a general resemblance to that of the stomach. Externally, they presented a doughy, thickened appearance, and their colour varied from a pale vermilion, through all the deeper shades, to a dark purplish hue; the former being chiefly remarkable on the peritoneal surface of the duodenum and jejunum; the latter in the ileum, about where it terminates in the cœcum.

When divided, the coats of the small intestine appeared thickened, flabby, and were more easily torn than natural. The internal surface was found lined with a viscid, thick, clay-coloured substance. When this was removed, the mucous coat itself was usually pale in the upper part of the small intestines, and dark coloured and congested in the lower part; particularly where the ileum was blue or purplish externally. When the disease was of longer continuance, or when there had been some degree of re-action, this viscid matter was detached to a greater or less extent, and was floating in the fluid contents of the small and large intestines. The mucous coat was then also more vascular than in the former class of cases.

The large intestines generally presented appearances of venous congestion, particularly on the external surface. The mucous surface was frequently very vascular, and sometimes presented a dark red colour, especially if the patient had lived for some time, and strong stimulants had been administered.

The liver was generally darker than natural, and loaded with thick black blood. The gall bladder was always distended by thick viscid bile; although the hepatic duct was large and permeable, the mouth of the common duct was generally constricted, and seldom permitted the bile to flow into the duodenum without considerable pressure made upon the gall bladder.

"In almost all the cases where bile was observed in the excretions, and the gall bladder was found empty on dissection, and consequently when it could be legitimately inferred that this secretion had passed into the intestines during the life of the patient, I remarked, that the viscid matter usually found lining the mucous surface of the small intestines was detached to a greater or less extent, and was either floating in the fluid contents of the large intestines, or entirely removed, along with the matters which had been ejected from them."—p. 125.

The great veins in the chest, the abdomen, and the head were loaded with thick, viscid, and black blood; to which condition

of that fluid Mr. Annesley attaches considerable importance. The right cavities of the heart were generally distended with the same kind of blood, and when any was found in the left cavities of that organ, it had the same appearance.

"That this condition of the circulating fluid," continues Mr. Annesley, "was not consequent on death, although it might be more or less heightened thereby, is evident from the appearances which it exhibited when taken away from a patient, even at an early period of the disease. During the subsequent stage, and more especially as the disease advanced to a fatal issue, the particular characters of the blood now noticed were the most manifest. That this state of the blood was the first material derangement consequent on the invasion of the efficient cause of the malady, I shall not contend; but that it was one of the earliest links in the chain of effects consequent to that cause, and that it afterwards tended, by a necessary and evident process, to heighten and perpetuate the derangement whence itself sprung, I have not the least doubt. That the nervous influence, in some manner or other, received the first impression of the morbid cause, and afterwards gave rise to this condition of the circulating fluid, may be inferred, if we be permitted to conceive that a diminished function of the lungs, liver, and other excerning viscera, was co-existent, or nearly so, with that primary change; and, consequently, that the blood did not undergo an elimination of its effete and noxious constituents to an extent requisite to the performance of the organic actions and the continuance of life."—p. 127.

Mr. Annesley next proceeds to treat of the causes of the epidemic cholera, which he considers under two distinct heads, viz. the efficient or proximate cause, and the occasional or predisposing. We fear that some of his speculations on the former of these are rather too hypothetical to bear a very rigid examination; but at the same time we are too well aware of the obscurity in which the matter is enveloped, not to look with considerable indulgence on every explanatory suggestion, originating with one whose extensive personal opportunities of observation justly entitle him to peculiar privileges on this head.

He starts with a proposition which must command universal assent, viz., that the sudden and singular change in the circulating fluid appears to be the effect of some uncommon influence over the vital powers; the difficulty lies in discovering the nature of this influence. Mr. Annesley thinks that many of the symptoms of epidemic cholera admit of explanation, by the mere fact of the circulation of black, or imperfectly aerated blood, the effects of which have been described by Bichât, Brodie, and other physiologists. He further labours to prove, that the cause which produces this state of the blood, in fact the efficient cause of the disease, is connected with, or dependent on, some peculiar condition of atmospheric electricity. We are compel-

led, however, to say, that nothing can be more vague and general than the analogies on which he seeks to establish this proposition; and nothing less scanty and unsatisfactory than the few facts, if they can be called such, which he adduces in its support.

"From these facts and considerations, therefore, I am led to conclude, that either the absence of electricity from the human body, or some important change in its electrical state, arising, perhaps, from exposure to a negative electrical atmosphere, may be the cause of the dreadful and destructive epidemic which has recently ravaged the East; and that the vicissitudes of the seasons preceding this formidable visitation may support this opinion. If, therefore, this view of the subject be correct, we may readily account for the sudden attacks of the disease, the changes in the temperature and sensibility of the body, and in the fluids, which changes seem chiefly to characterize it, and for the manner in which it has been limited to some districts, extended to others, and has successively ravaged all."—p. 139.

Mr. Annesley has not even adduced any proofs of the existence of an altered condition of atmospherical electricity during the prevalence of the epidemic cholera.

The predisposing or occasional causes of cholera, Mr. Annesley considers as common to it and most other diseases; and it is needless to say that though numerous, the influence which they exert is indefinite, and apparently liable to many variations.

"The predisposing causes," says Mr. Annesley, "merely aid the action of such a noxious power, (as he has suggested) by diminishing the resistance which the system can oppose to its influence."—p. 151.

"Whatever state of atmosphere produces the malady, or whatever predisposes the system to its invasion, I am decidedly of opinion, that sudden exposure to cold is its most common exciting cause, owing to the check which it gives to the capillary circulation on the external surface of the body."—p. 154.

"There can be no doubt that very unusually disturbed seasons prevailed at Madras, and its dependencies, for several years previous to the appearance of cholera; but the want of precise information as to this matter, beyond my own personal observation, which can only apply to the particular part of the country in which I was stationed, prevents me from entering into any detailed consideration of this subject."

The author candidly states that—

"There can, however, be no doubt that some unusual and more extended cause than the state of the seasons, or of the atmospherical vicissitudes just referred to, must have existed then, that did not previously; for we have witnessed, at former epochs, similar seasons and atmospherical vicissitudes to those now alluded to, without observing corresponding results arising from them; and we have seen the same excesses, the same privations, the same labour and exposure, in every degree, practised with perfect impunity till the year 1817."—p. 160.

"In the treatment of the disease," says Mr. Annesley, "I have always endeavoured to keep in view the cause of those urgent and distressing symptoms which never failed to excite alarm, and to mark the disease."

The examination of those who died, distinctly proved that the venous system was overloaded with blood, and naturally suggested the idea that the apparent debility characteristic of the disease was, in reality, produced by this state of congestion. Connected with, or dependent upon, this congestion, is a diminution in the decarbonizing function of the lungs, superadding a change in the chemical qualities of the blood to the altered state of its distribution in the vessels. This view of the subject evidently suggests the propriety of abstracting blood, for the purpose; first, of unloading the circulating system; and second, of re-establishing a due relation between the quantity of the circulating fluid and the decarbonizing capacity of the respiratory organs. In saying, however, that the view here taken of the pathology of the disease suggests the utility of blood-letting, we may remark that it would perhaps be more correct to reverse the statement, as it is probable that the experience of the beneficial effects of bleeding, when practised empirically, had in itself no inconsiderable share in the merit of giving rise to that explanation of the symptoms of the disease, which Mr. Annesley has adopted.

In either case, it is enough for us to know that he has found the advantages to be derived from this remedy most indubitable. To ensure this desirable object, however, it is essential that it should be employed early in the course of the disease, and before the circulation ceases at the wrist.

"After this period, blood will seldom flow from the veins, and when it does flow, it is generally in too small a quantity to afford relief.

"That cases have occurred, wherein eighteen or twenty ounces of blood have been taken away, and the patient died, cannot be doubted; but in all these cases it will be found that the bleeding ceased after the vessels had been emptied, whether one or twenty ounces had been abstracted. On the other hand, it will likewise be found, that if blood flows freely, till the colour changes from black to red, the patient in general will recover. When we observe, therefore, the thick, black, carbonated blood change to a natural red colour, and consequently to a thinner consistence, we may rest satisfied that the disease is under our control.

"Although I recommend bleeding to be attempted at all times, and in every stage of the disease, I am fully aware that many cases have recovered where it has not been used at all: nor do I answer for its universal success; but I do venture to assert, that if it can be accomplished in the early stage of the disease, and before the circulation has ceased at the wrist, in nine cases out of ten it will prove successful;

especially if the colour of the blood change from black to red, if the pulse get up, and the spasms be relieved."—p. 170.

In confirmation of this statement, Mr. Annesley appeals to the instance of the disease, as it appeared in 1821, amongst the crew of the General Harris, East Indiaman. This ship arrived at Madras on the 20th of June, and on the 27th, the disease made its appearance with great violence. Upwards of fifty men were landed and sent to the General Hospital, after having been previously bled, to the amount of twenty or thirty ounces, and having taken a scruple of calomel with two grains of opium. The whole of these cases recovered under the subsequent management of the author, in the General Hospital. On the other hand,

"Nearly all the men who were attacked with the disease on board ship, and who were not bled, or from whom blood could not be drawn, died. Many of those who were bled, and who derived benefit, but whose subsequent treatment could not be closely watched, from want of means, also died. Those men who were bled, and sent to the General Hospital, at Madras, where they could receive every attention, and had every means of accommodation, recovered."—p. 173.

Mr. Annesley is not disposed to unite in the commendations which have been bestowed on opium in the treatment of this disease, probably as much from a supposed analogy between it and the cholera of Europe, as from any real experience of its efficacy. On the contrary, he imagined, as might indeed be anticipated from the congested state in which the brain was found after death, that it had the effect of producing a determination to the head, and that the degree of stupor was increased in those cases in which it was employed. On this account he early discontinued its use, except in combination with calomel. In its place he substituted liquor ammon. and spirit of sulphuric æther.

He commends rubefacients, such as embrocations of turpentine, &c., to the extremities; sinapisms applied to the legs and soles of the feet, and sometimes to the whole trunk, from the clavicles to the pubes. He preferred sinapisms to blisters, from the greater quickness and certainty of their action.

He objects to the warm bath, on account of the fatigue of going into and coming out of it; and of rubbing and dressing the patient. If the patient, on coming out of the bath, were at once wrapped in a blanket, he conceives that more harm than good would ensue, in consequence of the moisture remaining in contact with his skin. For the warm bath he substituted the application of warm dry flannels, from which he observed more benefit than from any remedy of this description.

The author conveys an epitome of the plan of treatment in

the following sketch:—The first step was to open a vein with the objects already mentioned. A scruple of calomel and two grains of opium were then given, and followed by a stimulant draught. The body and extremities were well rubbed with dry flannels made warm, and bottles, filled with hot water, applied to the feet and hands; but if the spasms were severe, spirits of turpentine were used as an embrocation. In an hour it could generally be perceived if the disease were disposed to yield, or if it continued to make progress. If the former, nothing more was done for a few hours, when the calomel was repeated, and followed by an injection.

"When blood, however, cannot be drawn from the arm, and the spasms continue; when severe pain and burning heat are felt at the umbilicus and scrobiculus cordis; when the skin is cold, and deluged with cold clammy dew; and when there are oppressions in the chest and difficulty of breathing—excessive pain and confusion about the head, with great intolerance of light—no pulse, or a pulse scarcely to be felt, and a cadaverous smell from the body, twenty or thirty leeches should be applied immediately to the scrobiculus cordis; the calomel should be repeated, and the turpentine embrocations continued. Leeches ought likewise to be applied to the temples and base of the skull. After the leeches have fallen off, a large blister or sinapism should be applied over the whole abdomen.

"In this manner the treatment proceeds, sometimes with evident signs of success; at others, without the least impression being made upon the disease. A very few hours, however, will frequently develope what we ought always to hope for, and even to expect, viz., a favourable change. This is always accompanied by relief from the bowels, in the form of a blackish, grey, feculent, and tenacious discharge. Whenever this takes place, there is hope; and the exhibition of calomel should be followed up with a smart purgative, if the stomach will receive it; if it will not, an enema should be administered, and repeated till motions are procured.

"Twelve or eighteen hours generally terminate this disorder in one way or the other; but when we succeed in overcoming it, the greatest attention and care are required to preserve the patient from the effects of that general disturbance which the constitution has suffered in the attack. The whole system is shaken to its foundation, and the organic functions are so deranged, that I have known instances of men lingering in bad health for many months, although they had been perfectly well to all appearance not many hours before the attack; and indeed, I have seen some who have not recovered, and never will recover, from its effects."—p. 183.

Mr. Annesley enumerates, in the following order, the phenomena which directed his indications of cure, and by which he regulated the subordinate details of the treatment:—

"1st. The general symptoms of a congestive state of the brain, heart, lungs, liver, and abdominal viscera.

"2d. The black and thick state of the blood, and the presence of venous-coloured blood in the left auricle and ventricle, and in some of the arteries.

"3d. The singular vermilion tinge upon the upper part of the small intestines; and the dark venous vascularity of the lower part of the ileum.

"4th. The peculiar, viscid, tenacious, cream-coloured secretion and accumulation in the intestinal tube, which sometimes not only filled it, but actually glued it together.

"5th. The change of the colour of the blood, from black to red, while flowing from the arm; and the success of venesection in checking the disease, indicated by this change.

"6th. The favourable change which always followed dark, grey-coloured, and viscid dejections.

"7th. Dark green motions, succeeding to the above characterized motions, and the indication which the former furnished, viz., an approaching return to healthy function.

"8th. Collapsed state of the bladder, and want of secretion of urine, and its secretion and appearance always proving favourable."

With these circumstances in view, Mr. Annesley's object was to remove congestive symptoms, and to effect the discharge of the viscid, tenacious matter from the bowels.

"Bleeding, both general and local, antispasmodics, æther, ammonia, and camphor, with external stimulants, effected the first; and calomel, with aloes, the latter.

"Observing, even after the congestive symptoms were overcome, that little progress was made in the cure, till blackish grey, and subsequently dark green viscid dejections were procured, I was anxious to see what effects could be produced upon the secretions of the stomach and intestines, by bringing in contact the various medicines used in cholera with the secreted matter.

"The secretion itself was concentrated, cream-coloured, or greyish-yellow, like healthy pus. When mixed with alcohol, it formed a number of discrete coagula, minutely divided; colour unchanged or ochery.

"Ammonia, æther, and camphor produced no alteration whatever upon it.

"Diluted nitric acid precipitated it in small flocculi; tartaric acid in solution and in considerable quantity, completely dissolved it, and rendered it perfectly fluid.

"Cystic bile dissolved it sensibly, the mixture being intermediate in colour between the two.

"Calomel mixed with it, in small quantity, formed a dark greenish-grey, precisely similar to the dark grey dejections already mentioned, and appeared to dissolve it.

"Calomel and cystic bile combined, rendered it more fluid, and produced a dark green colour."—p. 193.

These experiments, though imperfect and few in number, must be allowed to possess considerable interest from the light

they promise to cast on the modus operandi of certain medicines on the intestinal canal and its contents. From the almost exclusive attention which has been devoted to the agency of the vital powers in the production of disease, it is by no means improbable that pathologists have too much disregarded the influence which physical, and, particularly, chemical actions may exert over the operations of many of the most ordinary curative means. This is particularly probable as regards the intestinal canal, for it is certain that a majority, if not all the processes in which it is concerned are essentially chemical, although they are of a more delicate and refined order than such as we witness out of the body.—It will at least be conceded that the subject is one of probable importance, and that it affords ample scope for the exertions of those who may be inclined to investigate it methodically.

We have made so many extracts relating to the treatment of the disease, that we find it is not in our power to notice Mr. Annesley's arguments in support of his opinion of the non-contagious nature of the disease. It is certain that the great mass of the evidence to be had on this particular, decidedly tend to that conclusion; at the same time that some detached but clear facts, on the contrary side, render a positive decision a matter not altogether exempt from difficulty.

We make no excuse for passing over the statistical and topographical reports on the diseases of the Indian army; as, though valuable, they possess but a partial interest; and as it would be impossible to give any abstract from the very condensed and tabular form in which they are framed.

We proceed to the observations on the effects of calomel on the mucous surface and secretions of the alimentary canal. Mr. Annesley commences by shewing that amongst the practitioners of the seventeenth and beginning of the eighteenth centuries, it was the practice to exhibit this medicine in much larger doses than are employed at the present day. On this appeal to past experience, we will only remark, that it is very far from being conclusive; and that it would be difficult to give any satisfactory reason why the practice should not have kept its ground, if it had been found either prudent or beneficial. Mr. Annesley, however, gives his own evidence most decisively in favour of scruple doses of calomel in the diseases of India, though he does not altogether coincide with the views under which it is recommended to be so administered. In particular, he considers that the doctrine is fallacious which inculcates that where mercury is useful, the mouth must be made sore, and that when the mouth is sore, the patient may be considered safe.

He conceives also, that there is no foundation for the idea that large doses of calomel are productive of a greater degree of irritation than smaller ones: according to him, the reverse is the fact.

"Small doses of calomel, from two, three, to four and six grains, will purge, and keep a considerable degree of irritation in the stomach and bowels, when twenty grains will not; but, on the contrary, will allay the irritation of both, when it results from inflammation of their mucous surfaces."—p. 387.

It must be remembered, however, that Mr. Annesley is an advocate for large doses of the medicine, rather than for large quantities in its long continued administration.

He has confirmed his views on the subject by experiments performed on dogs; in these calomel was administered in doses of one, two, and three drachms. In these so far from any marks of irritation or inflammation, the most striking result that followed appears to have been a diminution of the degree of vascularity, ordinarily existing on the surface of the stomach and intestinal canal.

In treating of the influence of calomel on the secretions of the intestinal canal, Mr. Annesley seems to think that this influence is chiefly, if not exclusively, chemical. According to him, the mixture of calomel with the tenacious secretions frequently found covering the mucous coat in the dead subject, causes it to assume a dark grey colour, to become more fluid and less tenacious. The dark grey colour is remarked only when there is no admixture of bile; and it deserves notice, that this appearance is the same with that which the alvine dejections assume after the administration of a full dose of calomel in the acute diseases of India, and before the biliary secretions appear in the stools.

Hence, the author suggests that this operation of the medicine on the secretion of the duodenum may be the means of unlocking or removing the mechanical obstruction it causes on the orifice of the common biliary ducts, and thus giving issue to its contents. He farther supposes that after this chemical action on the mucous secretions of the intestinal surface, an opportunity is afforded for the immediate action upon that surface itself of any further portions of the medicines, which action may be propagated along the canals of the ducts to the gall-bladder and liver itself.

"The same explanation will hold equally with respect to the pancreatic secretion, and satisfactorily account for the immediate and overpowering flow of bile which often follows a single dose of the medicine, as well as for the frequent exhibition of the remedy before the desired effects are produced by it."—p. 401.

It is almost impossible to criticise a train of reasoning so completely hypothetical, and built on such a slender foundation as the solitary fact of the mutual chemical action between the secretion or the medicine. It may or may not be correct, but it is at present in vain to look for proof on either side of the question.

In order, however, to give a complete idea of Mr. Annesley's pathological and therapeutical views on this point, it must be remarked that he farther supposes that the viscid secretion, so often alluded to, is morbidly increased during many acute derangements, and particularly those prevailing in India; and that in some of them, not only is the quantity increased, but also the qualities undergo various degrees of alteration or derangement.

"Upon laying open the intestines," says he, "the quantity of this tenacious secretion seems often surprising, and it is chiefly observed in those cases wherein active purgation had been neglected during the treatment. It is upon this morbid and accumulated secretion, that the action of calomel is particularly manifested. This medicine prepares it to be acted upon by other purgatives, renders it more fluid, and less adherent to the contiguous surface; thus leaving the mucous coat in a cleaner and more suitable condition for the influence of whatever remedies may be subsequently administered; and the functions of exhalation, secretion, absorption, &c. unobstructed by the thick coating which lined the surface in which these functions take place."—p. 404.

Mr. Annesley takes occasion to remark, that he is very far from recommending the indiscriminate employment of calomel in all cases, and under all circumstances. He maintains, however, that in many acute diseases, those of India more particularly, it may be given boldly without risk; and that bad effects are more likely to be caused by small doses frequently repeated, than by a larger quantity given at once and discontinued when the desired objects are accomplished. He specifies those objects as being to allay irritability, diminish vascular action, and cleanse the intestinal canal of the tenacious matter which often lines it, and in many cases, almost completely obstructs the passage through it.

He concludes, therefore, that calomel in doses of from ten to twenty grains, alone or combined, is indicated in those diseases in which, from the great irritability of the stomach, the state of the tongue, and the functions of the abdominal viscera, that increased vascularity of the digestive canal is present, with a deranged state, and accumulation of the mucous, and other abdominal secretions, as in all the types of fever, dysentery, liver complaints, &c.

In these diseases his practice was to give twenty grains of

calomel, with, and sometimes without, one or two of opium, at bed-time, followed by a purgative in the morning; repeating the medicines daily until the excretions assumed a healthy hue.

"In these diseases," he proceeds, "I never wished to see the mouth in the least affected; whenever this happened, I considered the salutary effects of calomel interrupted, because its use must be then discontinued; and it was my object to act upon the secretions of the intestines, and not in the most remote degree upon the salivary glands —p. 407.

"When it is desirable to affect the constitution with the mercurial action, in order to remove any glandular obstruction, I cannot advise this object to be attempted by the exhibition of small doses of calomel given at short intervals. I have always found this practice attended with unpleasant effects, and the digestive organs not unfrequently injured by it. I therefore recommend the blue pill in preference, and that the use of it, even, should not be pushed farther at any time than the production of a slight soreness of the mouth, nor so far as that, if decided benefit follow the exhibition of the remedy, short of this effect." —p. 409.

The remarks which the author makes upon the exhibition of calomel in the disorders of children are written in the same spirit of bold and original practice.

Constipation.—The bowels of children are frequently loaded with a viscid pultaceous matter, the accumulation of which becomes the source of farther disease. In such cases calomel is invaluable.

"Having," says our author, "exhibited, and repeated according to circumstances, a full dose of calomel to children, namely from five to fifteen grains at bed-time, and given a dose of castor oil, or any other purgative, in the morning; and having thus secured the immediate effects of the treatment—the removal of constipation, and a natural appearance of the motions and of the tongue—our next endeavour ought to be to prevent the functions of the intestinal canal from relaxing into their former state of inactivity, and the mucous secretions from accumulating upon the inner surface of this canal. This end is best obtained by exhibiting, immediately after the calomel has performed its purposes, gentle doses of alterative aperients at bed-time, and active doses of tonics through the day."

Worms.—In former numbers of this Journal, we have entered our protest against the indiscriminate use of cathartics in the case of worms. Our author's views in a great measure coincide with our own, though he continues to recommend his large doses of calomel to remove the sluggish state of the bowels, and the accumulation of viscid mucous which forms the nidus of the worms, following this with deobstruents and tonics.

"As soon," he says, "as we perceive the motions assume a dark

grey colour, resembling a combination of quicksilver and chalk, we may conclude that the calomel is producing its beneficial effects. This colour of the motions, which arises from the admixture of the calomel with the morbid matter accumulated in the bowels, should be distinguished from the diseased secretions themselves; and the same plan of treatment which gave rise to it ought to be continued until a dark green colour of the stools is observed. This latter appearance of the motions generally proceeds from the flow of the cystic bile into the duodenum, and its admixture with the matters contained in the bowels. The exhibition of calomel ought not to be put a stop to upon this appearance of the stools, but should be continued until they assume either a bright orange colour, or a natural character and consistence; when the tonic and aperient after treament, already recommended, may be pursued."—p. 454.

The author concludes with some useful remarks on the prejudices against calomel, and on the erroneous methods of exhibiting it.

"When," he says, "it has been avowedly given as a purgative, it usually been prescribed in small, irritating, and inefficient doses; and practitioners have generally contented themselves with resorting to it once or twice, or at most occasionally; and hence they have had no opportunity of experiencing the effects arising from its more protracted use when given in large doses, and alternating it with purgative or aperient draughts.

"The dose of the medicine has been assigned by authors of modern dispensatories, and other writers, with a precision and limitation which were by no means requisite; and those who merely followed the recommendations of others without thinking and acting for themselves, either blindly adopted the same practice, or, if they did attempt to modify it, proceeded no farther than to exhibit the medicine more frequently; and thus they actually resorted to a more hurtful mode of prescribing it than any other they could have pursued."—p. 463.

It is unnecessary that we should accompany the author in the application of these general principles to the treatment of other individual diseases. Though limited space has necessarily confined our notices to parts of the work only, we are sure that we have shewn sufficient ground for the commendations we bestowed upon it in commencing, and for justifying us in particularly directing the attention of our readers to it.

ART. IV. *An Inquiry into the Seat and Nature of Fever, &c.* By HENRY CLUTTERBUCK, M.D. pp. 434. Anderson, London, 1825.

Dr. Clutterbuck's Treatise, always valuable, has been much

improved by the opportunity a Second Edition has afforded of communicating the results of his subsequent experience, which is the more worthy of attention as it has farther confirmed the author in the truly original and ingenious views he some years since promulgated, of the seat and nature of the disease. The general tenor of those views is too well known, and has already attracted too much attention, to require that we should enter into any very minute examination of them. We may remark, however, that the whole of his doctrine may be arranged under two distinct heads; the one as relates to the *seat*, and the other as to the *nature* of fever; neither of which is absolutely dependent upon, or inseparable from the other. For this reason it is quite possible that the line of argument which affords proof of the one, may be inadequate to establish the other; and we may, without any contradiction, agree with the author in some particulars, at the same time that we are compelled to withhold our assent to the remainder.

First then, as to the SEAT OF FEVER: this we conceive to be the strongest part of Dr. Clutterbuck's doctrines. He may, perhaps, not have been the first to suppose that fever, properly so called, is essentially an affection of the brain: the phenomena of the disease which indicate its connexion with the sensorium are too uniform in their occurrence, and too striking in their appearance, to have altogether escaped the attention of many acute observers of ancient and modern times. Accordingly we are ready to allow that there is a certain degree of truth in the assertion which some may be disposed to make, that he has, to a limited extent, been anticipated in this particular. We doubt not that it would be possible to quote from many preceding authors enough to convince us, that they had not been altogether unobservant of the conclusions to be drawn from the remarkable disturbance of the sensorial functions in fever.

But allowing the utmost weight to these objections to Dr. Clutterbuck's originality, we by no means think that they warrant the exclusive inferences that have been drawn from them. An impartial examiner will soon be convinced, that even of those who were cognizant of the peculiar phenomena of fever as indicating its seat, few or none followed up the light thus thrown upon the disease, and that although they may appear for a moment to entertain more correct ideas than ordinarily prevail, they soon relapse into the common errors of pathologists, and betray, by the mass of their argument that they are quite unconscious of the importance of the principle on which they have stumbled. Surely no one can deny that there is a vast difference between the merits of him who catches a momentary

view, however correct, of any subject, and of him whom a legitimate train of reasoning, embracing causes, phenomena, and consequences, leads to similar results. The latter undoubtedly is entitled to all the merits and advantages of a discoverer; and to decide otherwise would, in fact, be to encourage a spirit of detraction, and to deprive talent of its just reward.

To apply this to the present instance: many since, and few, if any, before our author, have established the seat of fever, in the same manner and with the same precision that he has done. He has viewed and examined the disease in every possible way, whether as relates to its symptoms, the causes which precede it, or the consequences which follow it; and has expressed the result of his inquiries with such force and distinctness, that in reading it we appear to forget the labour and extent of the research, and only feel surprised that there should ever have been any doubt or hesitation in assenting to consequences so naturally and inevitably linked with the premises. It is in this respect that we conceive Dr. Clutterbuck deserves peculiar praise; and that the doctrine he labours to establish, ranks among the most important discoveries.

It will be right that we should give our readers some idea of the mode in which Dr. Clutterbuck has conducted his investigations; premising, that the terseness and precision of his language form a striking contrast to the vague and declamatory diffuseness with which systematic writers are accustomed to treat of the same disease.

Dr. Clutterbuck commences by objecting to the supposed *universality* of fever, in which respect he has long anticipated Broussais, and a host of other modern writers. He has gone farther, however, by shewing that this error has arisen from a want of proper discrimination between the *primary* or essential, and the *secondary* or occasional symptoms.

"But although the phenomena of fever appear at first view so various and complicated, as scarcely to admit of arrangement, they will be found, when attentively examined, to observe a certain and determined series and order, a careful attention to which will enable us, I apprehend, to assign the true and original seat of morbid affection. It is the want of a sufficient discrimination between the *primary* and *essential* symptoms, and those which are *secondary* or of *occasional* occurrence only, that has given birth to most of the ill-founded theories, which have heretofore prevailed on this subject. Those who considered morbid excess of heat, putrescency of the fluids, bile in the stomach and bowels, spasms, debility, &c. as constituting the *essential* part of fever, appear to me to have fallen into this error.

This very fact of the apparent universality of the disease, is in itself a strong reason for seating it in the sensorium. On no other ground than the extended sympathetic connexions of that organ, can we understand the general disturbance of the functions of almost every other.

The author next proceeds to quote from various writers of established reputation a description of the symptoms of fever, which serves at once to protect him from the imputation of reasoning on his own data merely, and to prove how large a proportion of them are immediately indicative of a disturbance of the functions of the brain.

It is not to be supposed, nor is it necessary for the argument, that this disturbance of the sensorial functions is always uniform in its degree or kind; nor probably would it be a very easy matter to trace the causes of the differences observable in this particular. Dr. Clutterbuck considers these functions under three heads; the external senses; the voluntary, and the intellectual powers. The kind and degree of disorder of the organs of sense are liable to considerable variety. Sometimes their sensibility is considerably diminished; more commonly, and especially in the early stages of the disease, it is morbidly acute. Different organs are affected in different individuals, "which may reasonably be ascribed to the particular part of the brain that is suffering from the disease."—p. 43.

The affection of the voluntary power is among the most uniform sensorial disturbances; to this head are to be referred the languor, lassitude, indisposition to motion, and depression of strength characteristic of fever.

"Such, invariably, is the condition in the *voluntary power*, in even the slightest case of fever, and that from the very commencement of the disease. In violent cases, even from the beginning, and in the more advanced stages of the disease in general, the voluntary muscles are not only thus weakened, but disordered in their actions, in the highest degree. In these circumstances it is, that muscular *tremors* take place (*subsultus tendinum*, as they are called), and the tongue trembles, when put out for examination; while the semi-voluntary muscles, the *sphincters*, often cease to perform their office altogether. Those of respiration, likewise, often partake of the general loss of power in the muscular system; and thus breathing is performed with labour and difficulty, and very imperfectly: in consequence of which, the blood passes with difficulty through the lungs, obliging the patient to make frequent deep inspirations, thus occasioning that propensity to sighing, which is so remarkable in severe cases of fever; as it is likewise in the *acute hydrocephalus*, in certain stages of that disease.

"In reference to these symptoms, it is almost needless to remark, how immediately dependent the *voluntary power* of the system is on the

brain; or how strongly every great depression or disorder of it, indicates a morbid condition of this organ."

The disorder of the mental functions, though not always equally obvious, is scarcely less uniform than that of the voluntary powers. In its slightest degree, it displays itself by the utter incapacity of accomplishing the cerebral actions, ordinarily described as the operations of mind. This incapacity is sometimes replaced by confusion of thought, stupor, dulness, or delirium of various kinds; all these different sorts or degrees of disorder, agreeing in so far as they indicate affections of one organ; and that organ, the brain. "The state of the patient," —says Dr. Clutterbuck, "in regard to sleep and watching in fever, is always different from that of health:"—and we may add always characteristic of the seat of the disease.

Besides these, other symptoms present themselves in the course of the malady, either generally or occasionally, which are only explicable by connecting them with a disorder affecting the nervous system, or to speak more precisely, the sensorium: such are convulsions, convulsive tremors, paralysis of the sphincter muscles, the peculiar cast of countenance remarked by the best observers. Among the most universal, at least, when the condition of the patient in other respects allows him to express his feelings, is pain in the head; with which may be ranked the pain in the back, referrable probably to the connexion of the spinal marrow with the brain.

We will not pretend to follow the author through the examination of the state of respiration, of the sanguiferous system, of the blood, of the lymphatic system, of the alimentary canal, and of the secretions and excretions in fever; because we have it not in our power to exhibit a satisfactory view of the ingenious train of argument by which he demonstrates that the disorders witnessed in these systems and functions is only secondary, and does not form any essential or characteristic part of fever. We shall content ourselves with quoting his general conclusions:—

"On reviewing the phenomena of simple *idiopathic* fever, as described above, it must, I think, be evident that the *sensorial functions*, those that belong peculiarly to the brain, are those which are primarily and essentially disturbed; not in a casual way merely, but constantly, and in a degree proportioned to the violence and danger of the disease. Other functions are deranged in a secondary way only, and in a manner that is common to various other diseases. It is in the state of the sensorial functions therefore, that the pathognomonic or distinctive characters of fever are to be found. So that as far as the seat of disease in any case is determinable from the state of functions, there appears the strongest reason to refer proper fever to the brain, as its primary and

essential seat: while it is from the state of the functions of this organ, almost exclusively, that we form our prognosis, or judgment of the event. To this may be added the feelings of the patient, which, in most cases, point to the head as the chief seat of suffering; and which indeed the countenance sufficiently expresses; so much so, that a little familiarity with fever, will enable any one to recognize it on a first inspection.

According to the view of the subject now taken, the following may be given as a compendious statement of the natural order in which the chief phenomena of fever present themselves.

I. *Essential or pathognomonic symptoms.* Pain in the head in almost every case, at least in the earlier stages of the disease, though afterwards often disappearing; sensorial functions, viz. *sensation*, *voluntary motion*, and *mind*, all more or less, though unequally, disturbed;—state of sleep, unnatural.

II. *Common symptoms*, or such as are observed in various other diseases. *Pyrexia*, or general febrile state of system, viz., heat of skin and of internal parts, furred state or other preternatural appearance of the tongue; generally frequency of pulse, with other signs and effects of excited and disordered circulation.

The former class constitute what may be termed the *local* symptoms of fever, and serve to point out the actual seat of the disease; the latter or *common* symptoms, are such as arise out of the general disorder of system, and tend to shew the intrinsic nature of the disease; as will hereafter appear. By attention to these conjointly, the existence of *simple* fever may at any time be readily discovered, so as to be distinguishable from all other diseases; and where fever is found complicated with other affections, as is not unfrequently the case, the distinction of the one from the other will be still sufficiently easy, by observation of the symptoms that are proper to each.

The *local* symptoms, as already remarked, are in most cases manifestly seen to precede the *general* ones; and if in any case the reverse seems to take place, it is to be ascribed to the slight degree in which the sensorial functions are at first disordered, and the natural insensibility of the organ primarily affected; whence the little attention that is consequently paid to the actual commencement of the disease.

The *general* symptoms, as depending upon the *local* ones, are likewise commonly the first to decline or to disappear; not unfrequently, however, leaving behind them, more or less of disturbance in the sensorial functions, with perhaps, a slight degree of pyrexia or general febrile action, thereby proving, that the topical affection has not wholly subsided. And indeed in many cases, several weeks elapse before the disease has altogether disappeared, so that the patient can be said to be really convalescent.

Dr. Clutterbuck next proceeds to examine the remote causes, the predisposition to fever, and its consequences, as indicative of its seat. The latter afford by far the strongest evidence on this point, though even as regards the other two, many analogical arguments may be adduced; which, though not of them-

selves sufficient to decide a disputed point, when taken in combination with other facts, materially contribute to establish the correctness of the author's views. As regards the consequences of fever, the case is still stronger. Succeeding to this disease nothing is more common than to witness effects corresponding to those produced by injuries of the head, phrenitis, and other instances in which the brain is universally allowed to be the part concerned. Those effects consist in derangements of the external senses, of which, perhaps, deafness is the most common: affections of the voluntary powers, such as paralysis of one or more parts, convulsions, &c., and lastly impairment of the mental powers, either temporary or permanent, such as loss of memory, either complete or confined to a few topics only, irritability of the mind, and sometimes complete fatuity.

"On the other hand, fever has been found, in many instances, a remedy for other diseases originating in the brain, as palsy, epilepsy, &c., thus manifesting its influence on the state of that organ."—p. 119.

Having by these and similar arguments endeavoured to prove, and as we conceive, successfully, that the brain is the seat of fever, Dr. Clutterbuck next proceeds to inquire into its nature; which he considers to be, "either a state of actual inflammation, or, at least, a condition nearly allied to it."

In this part of his treatise, and more particularly in the analogy which he attempts to establish between fever and inflammation, Dr. Clutterbuck appears to us to have taken too limited a view of the former disease, and to have in some degree selected one form of it for the purpose of comparison; applying the results of that comparison to every other shape in which the malady presents itself. Thus, he speaks of suffusion of the eyes, redness of the face, throbbing of the vessels of the head, increase of its temperature, undue susceptibility of the senses to external impressions, and similar symptoms as indicative of a state of inflammation of the brain in fever. That they are so, or nearly so, few will doubt; but even this admission, extensive as it may appear, will go but a little way to establish the identity of fever with inflammation, unless it be shewn that those symptoms are essential to the former disease. That the brain is inflamed, or in a state approaching to inflammation, when such symptoms show themselves in the course of fever, is highly probable; but still, allowing the occasional or even frequent complication of fever with phrenitis, the question remains whether the two diseases, though analogous, be not distinct and distinguishable in their symptoms and their nature, as indicated by those symptoms. There can be no doubt that the voice of experience will declare itself in the affirmative.

We observe that, in more than one instance, Dr. Clutterbuck speaks of the state of the brain in fever, as a condition *approaching* to inflammation, or as an inflammation *sui generis*. The opinion that fever is a state which, though not actually inflammation, closely approaches and readily runs into inflammation, is probable in itself, and is recommended by the adoption of many eminent pathologists. With this modification, Dr. Clutterbuck's dogma will be found freed from its principal objections, and to differ from commonly received opinions, in sound rather than in fact. In truth, when we examine what he says of the treatment of the disease, it is obvious, that if fever be considered as a state of inflammation, the latter term must be employed in a sense very different from its common acceptation. As to speaking of an inflammation *sui generis*, it is little more than an indirect confession of ignorance; for we believe that such a state will generally be found to be no inflammation at all.

Another consideration, which in our opinion forms an objection of no small weight to the doctrine of the inflammatory nature of fever, properly so called, is, that such an explanation is inadmissible as to the phenomena which present themselves in sympathetic or symptomatic fever. Here we find all the symptoms characterizing the disease produced by a condition of the sensorium sympathizing with the affections of other organs. Every theory which pretends to explain the nature of fever should be applicable, as well to the symptomatic as to the idiopathic form of the disease: the propriety of this requisition must be at once obvious; and it is equally so, that the doctrine which propounds inflammation as essential, must be of only partial applicability, and therefore *primâ facie* incorrect.

In refuting one dogma, we have no intention of substituting another in its place. We do not pretend to explain the state of the brain on which fever depends; we merely assert that fever, whether idiopathic or symptomatic, is the result of a certain condition of the sensorium, the nature of which condition is imperfectly understood; occurring primarily and independently in the idiopathic form of the disease; whilst in the symptomatic, it is secondary, and the consequence of the sympathetic connexion between the sensorium and some other organ, the functions of which are disturbed.

Though for these and other reasons, which it would lead us too far away to adduce, we cannot admit the perfect correctness of Dr. Clutterbuck's theory of the essence of fever, we will not refuse him the merit of great ingenuity and ability in the endeavours he has made to establish it; nay more, we are convinced, that if we must accept of a theory of a disease, too imperfectly

understood to afford a perfect one, the author's accords more closely with the phenomena than most others; leads to a more judicious and generally successful practice, and has more of truth and applicability in it, than the jumble of unmeaning terms often attached to pathological investigations of fever; such as collapse, nervous debility, venous congestion, and so forth.

In pursuance of his views, Dr. Clutterbuck institutes a close and ingenious comparison between fever and inflammation in various particulars; such, for instance, as the phenomena of the two diseases, the condition of the blood, and the exciting causes of both. It cannot be doubted that in these and many other points, there is a great and striking analogy between them; but it should be recollected that analogy is no proof of identity; and if we are not mistaken, it will be found that, when the two diseases are most strongly marked, the analogy between them is least evident, or is replaced by no small degree of discrepancy.

Dr. Clutterbuck lays considerable stress on the mode of cure in fever, as indicative of its identity with inflammation. Not to mention that this kind of reasoning is open to many objections, it may be recollected that the treatment of fever is much less settled and uniform than that of inflammation, and is often of such a kind in the one case, as every thing we know of the other would induce us to consider injurious. Dr. Clutterbuck, however, has in some degree anticipated this objection, though we think he has not destroyed its force, by labouring to shew that fever and inflammation are similarly circumstanced in this particular.

To those who wish fully to understand the tenor of Dr. Clutterbuck's principles, and the mode of arguing by which he attempts to establish them, we would recommend the perusal of the section in which he draws a comparison between fever and phrenitis. Whilst we are compelled to differ from him, we cannot withhold our admiration of the clearness of his language, and the dexterity with which he employs correct physiological knowledge to elucidate obscure points of pathology. We quote the conclusion as a specimen of the section:—

"The occasional causes of *phrenitis* and of *fever*, are in many instances the same. Externalviolence, exposure to the burning rays of a vertical sun, the excessive use of spirituous liquors, and vehement passions of the mind, are known to give rise equally to phrenitis and to fever. Certain kinds of food taken into the stomach, and some poisons, as *opium*, *hyoscyamus*, and the like, have been said to occasion, at different times, both *phrenitis* and *fever*.

"The symptoms which succeed to injuries inflicted on the head, some days after the accident, and which are known to depend upon the coming on of inflammation in the brain, have often every character of idio-

pathic fever, and have repeatedly been mistaken for it. Many instances of this sort are to be found in chirurgical writers. Mr. Pott mentions the case of a woman who was brought into St. Bartholomew's Hospital, labouring, as it was supposed, under ordinary fever, and put under the physician's care accordingly. The pulse was full and hard, the skin hot and dry, the tongue furred and black; there was nausea, with disposition to vomit; thirst, intolerable headache, and *pervigilium*. The common treatment of *fever* was had recourse to. On the following day, however, a tumour was accidentally discovered in the scalp, which being opened, the bone was found to be bare, and beneath this, purulent matter lodged on the dura mater. This, on inquiry, proved to be the consequence of a blow received on the head eight days before, and which was not suspected at the time of her admission into the hospital, to have any connexion with her disorder. Had this discovery not been made, it is probable the patient would have been considered to die of common fever.

"A man received a slight wound on the head, which being healed by the third day, the patient was discharged from the hospital cured. A week afterwards, he was brought again to the hospital, as a *fever* patient, was put into the *fever* ward, and treated accordingly by the physician, during the space of four days. He was comatose, with a central pulse inconceivably languid: his senses were clear, but he was prevailed upon with difficulty to answer questions; he had some convulsive motions in his face, with a grinding of the teeth. By mere accident he made complaint of a slight pain in the part where he had received the stroke, and this led to the detection of the real nature of the case.—Had the interval between the wound and the subsequent symptoms, in this case, been a little longer; or had the patient not been sent to the same hospital as at first: it is probable he would have been treated as a fever patient throughout.

"The mode of cure found most successful in *phrenitis*, is applicable also, in a considerable degree, to fever; due allowance being made for the habit of the patient, and the stage of the disease. In the acute form of phrenitis, blood-letting, with all the other antiphlogistic remedies, is principally relied on. In the most violent forms of fever, blood-letting appears, from experience, to be no less necessary, as will be seen hereafter. In the chronic form of inflammation in the brain, and in such as takes place in scrofulous children, the same liberal evacuations are probably not admissible, any more than they are in certain states of fever.

"The mutual convertibility of *fever* and *phrenitis*, as mentioned above, furnishes an argument of some weight, in favour of the identity of the two affections. In the course of ordinary fever, the delirium often assumes, for a time, an active character, resembling altogether that of *phrenitis;* while the latter commonly degenerates into the apoplectic stupor of *malignant fever*, before it proves fatal.

"It appears then, that *idiopathic fever* and *phrenitis* have their most essential symptoms in common, all of which are referable to the brain

and its functions; they are produced by similar causes; and the *prognosis* is the same in both. The feelings referred by the patient to the head in *fever*, are just the same with those of other inflamed parts, viz., pain, heat, and throbbing; whilst the functions of the brain are in every case more or less deranged: and lastly, the general state of the system is the same as in other internal inflammations, due allowance being made for the influence which the brain exerts over various parts of the body, which tends not a little to modify the general affection. There seem to me, therefore, the strongest reasons for concluding, that the inflammation of the brain in fever, is not merely casual and *secondary*, but *primary* and essential; in short, that it is the disease itself."—pp. 185-9.

Dr. Clutterbuck devotes considerable attention to the influence which the morbid anatomy of the disease may be supposed to exercise on the decision as to its nature, and labours to invalidate the testimony which his opponents may derive from this source. He attempts to prove that there is no very generally admitted standard of the healthy condition of the brain, whence its appearances when diseased are more likely to be overlooked; secondly, that examinations of the brain after fever are rarely instituted; thirdly, that its minute and subtle structure opposes great obstacles to satisfactory investigation; and lastly, that fever may prove fatal without leaving after death any traces of the previously existing inflammation. The last is the only argument that deserves refutation; and even this is nothing more than an unsupported opinion opposed to analogy, and contradicted by many facts. We can see no sufficient cause why this case should form an exception to the maxim—"*De non existentibus et non apparentibus, eadem est ratio.*"—To the well known fact that cases of fever sometimes, though not often, prove fatal without leaving any traces of inflammation, it is in vain to oppose the gratuitous supposition of an inflammation existing during life, and though fatal, disappearing with it.

It is somewhat singular that though differing in almost every other respect, Dr. Clutterbuck should so far coincide with Brousais, as to employ the same kind of reasoning to prove the existence of an inflamed state of brain during life, with that which the latter adopts to account for the disappearance after death of the never failing "*gastro enterite*,"—which performs so important a part in his peculiar system of pathology.

We subjoin some extracts elucidating Dr. Clutterbuck's opinion on the points we have alluded to.

"In the first place, the wonderfully minute and delicate structure of the brain renders it unfavourable for accurate examination. Of this complicated organ, made up of numerous parts, the particular uses of

which are still in a great measure unknown, our knowledge is exceedingly limited. It more quickly undergoes a change in its texture than almost any other organ, by which it becomes soft and unresisting, rendering difficult or fruitless all attempts to observe it narrowly. This tendency to decomposition in the brain comes on, in general, so rapidly after death, that we are probably but little acquainted with its perfectly sound and natural appearance.

"In the next place, it is to be considered, that by far the greater number of demonstrations of the human body, given by anatomists in the schools, and from which our knowledge of the structure and appearance of the brain is principally derived, are of subjects destroyed by diseases, many of them, no doubt, of this very organ. And when we reflect, further, on the sources from which the anatomical theatres are chiefly supplied, namely, the most indigent classes of society, a considerable number of whom are daily cut off by fevers, it must appear highly probable, that what is considered and exhibited as the natural and healthy state of parts, is often in reality a diseased one, perhaps the immediate consequence of fever itself, and which we have not yet learned clearly to distinguish from the state of health. It is almost needless to observe, with respect to this, that where the sound and natural state of a part is imperfectly known, it is quite impossible that the morbid changes of structure to which it is liable, should be well understood. What we, therefore, so commonly meet with in books, as to the state of the brain in regard to hardness, softness, colour, fullness, or emptiness of vessels, &c., is perhaps little to be relied upon. Not that such appearances do not really exist, or are unfaithfully described, but because we have no certain standard of health to which we can refer them, as objects of comparison. Nor can we readily tell, in all cases, whether the changes observed are the effects of disease, or of a beginning decomposition of parts.

"Further, it is to be suspected, that those who have taken upon them to observe and report on the state of this organ after death, have not always been fully competent to the task. "Paucæ quidem," says Sömmering, "extant huc pertinentes observationes a viris structuræ corporis humani adprimè gnaris descriptæ." That inflammation of the brain, though present in fever, has been sometimes overlooked, even by practical anatomists, is evident from the following:—

"Bonetus, describing a case of fever where the patient died with lethargic symptoms, says, "on opening the head, the *dura mater* appeared slightly inflamed: the vessels of the *pia mater*, in their course to the third *sinus*, were of three times their usual size, *but without inflammation*, and the *sinus* itself was full of blood. The surface of each ventricle was *rough*, *unequal*, and flaccid, and *covered with a viscid purulent fluid.*" Fontanus relates the case of a young man, who, on the ninth day of a *tertian*, was seized with the symptoms of *phrenitis*, and lived till the sixty-fifth day. The brain, on inspection, he says, was found *without injury*, but marked in various parts with bloody spots—*maculis sanguineis undequaque respersum.*—The *pia mater* was

turgid with blood, *et ramuli ejus tumidi et accensi.*—This shews how little reliance is to be placed on general assertions, in this and many other cases, that the brain had suffered no injury. Clearer marks of disordered vascular action could not well exist, than are to be found in the descriptions just quoted."—197-201.

Want of space obliges us to pass over much interesting matter, particularly a review of the opinions of authors as to the nature of the disease. We are compelled to treat nearly in the same manner that part of the work assigned to the consideration of the cure of fever, which, however, is investigated not so much practically, as theoretically, and with a view to illustrate the nature of the disease. After describing the empirical and uncertain manner in which it is ordinarily treated, Dr. Clutterbuck proceeds to say :—

"If there be any foundation for the doctrine of fever here brought forward, much of these evils undoubtedly will be prevented. The disease may still prove difficult of cure, and, notwithstanding our best endeavours, terminate on many occasions fatally; but the *seat* and *nature* of the disease being known, the proper indications of cure will be obvious, and the means of fulfilling them simple, though not always effectual: the object of the practitioner will be clear, and his efforts at least well directed.

"It is a peculiar feature of the present doctrine that it is not, as far as I am able to judge, at all at variance with any established mode of cure, the utility of which experience has fully sanctioned. The hypotheses that have from time to time prevailed with regard to the nature of fever have, almost without exception, when applied to practice, been found defective. They have either furnished indications, which have proved inadequate to the purposes of cure, or have suggested the employment of means which experience has shewn to be prejudicial. Of this, it would be easy to adduce abundant proofs. Whether we look to ancient or to modern times, we shall find reason to be convinced that medical hypotheses have not a little tended to vitiate medical practice.

"Those who believed in the existence of *lentor* and *obstruction* as the cause of fevers, naturally inclined to the copious use of *diluents*, and of medicines supposed to be of a *resolvent* nature; as *neutral* and *volatile* salts, and *saponaceous* compounds. Those who supposed the existence of a predominant *acidity* in fevers; or, on the other hand, an *alkalescent* state of the fluids; insisted, of course, upon the use of remedies of an opposite description. Those, again, who looked upon morbid *excess of heat* as the essential part of fever, should, to be consistent, have confined their attention chiefly to the means calculated to reduce this: yet it is certain that fevers are, on many occasions, best and most speedily cured by *heating* and *stimulating* remedies; being, by these, sooner brought to a *critical* termination:—"licere febres parvas augere," says Celsus,—"fortasse enim curatiores fient; et cum magis corpus incaluit, sequatur etiam remissio."—p. 275.

And again—

"But if the opinion I have been endeavouring to establish be well founded;—if fever, as I suppose, consists essentially in topical inflammation of brain; it becomes a question of moment to determine what influence such a doctrine ought to have on practice. Should we be content, as hitherto, with suffering the disease to wear itself out, after harassing the patient for two, three, or more weeks; at the risk, all the while, of exhausting his strength by the immoderate exertions of the system, and of ruining at the same time the structure of the most important organ of the machine, and along with it the energy of both body and mind—to say nothing of the destruction of other organs, which so frequently happens during the course of fever? Or ought we, from the analogy of other inflammations, to interpose our efforts, and by the use of prompt and active means, endeavour to cut short the progress of the disease, and thus, in many instances, anticipate or prevent the most serious future mischiefs? This is a question, when we consider the almost endless varieties of fever that occur, of the most difficult nature, and one which I cannot hope to answer completely or satisfactorily. No general rule can be laid down that will apply to all cases. What may be safe and easy to accomplish on one occasion, may be hazardous and difficult on another, and quite impracticable in a third; according to time, degree, and various other circumstances. My present object is to shew the use that has actually been made of the different means in question, in the cure of fever, with such others as experience has confirmed the utility of; and to inquire how far the result of their employment tends to confirm, or otherwise, the doctrine here contended for."

It might be supposed that our author's opinions as to the nature of fever would lead him to employ blood-letting more freely than is consistent with generally established doctrines. It is pleasing to find, however, that here, as in many similar instances, theory yields to experience, and that many of the most strongly disputed dogmata exert much less influence over practice than could be anticipated. It is important that Dr. Clutterbuck should be heard for himself in explaining away the apparent inconsistency between his theory and his practice; for we are not quite sure, that however specious his logic may be, he altogether succeeds in establishing his positions.

"Phrenitis itself may take place under circumstances that do not admit of blood-letting to any extent. It may arise in the most debilitated state of system; or it may have subsisted so long as to have injured the organization of the brain; or occasioned a large effusion of serum; or it may occur in the course of other diseases, that do not call for, or allow of such a remedy. The nature of the part affected by inflammation makes a material difference also in regard to the treatment, and which difference can only be learned from experience. Thus, in acute rheumatism, and in erysipelas, the inflammation is often of the most active kind; and the subject may be even strong, and the disease

recent; yet experience has sufficiently shewn that blood-letting is both less safe and less effectual than in inflammation of various other parts. Nor is it at all unreasonable to believe, that the brain has its peculiarities in this respect. In many states of fever, where the brain is evidently oppressed, the whole vascular system is in a state of great depression, as indicated by the pulse and other circumstances, as before noticed; and it is altogether a question of experience, whether, or to what extent, in such a state of things, blood-letting is either safe or useful; although in the same case, in an early stage of the disease, it might have been no less safe than effectual. The oppressed condition of the brain, manifest from the state of its functions, that takes place in the more malignant and advanced stages of fever, is owing principally, in my opinion, to a degree of stagnation, or impeded circulation, in the brain, the result of the excited and distended state of arteries producing compression of the veins, and thus preventing the free transmission of blood through the organ. What effect a sudden and large abstraction of blood from the general system might have in such a condition of the brain and its vessels, it would be impossible to say *à priori:* nor do I think that experience has yet sufficiently decided the point. It would be unreasonable to expect that blood-letting should be a universal remedy for fever, (allowing this to consist in inflammation of the brain) since it is not found to be such in any other disease; no inference, therefore, can be fairly drawn against the doctrine here maintained on this account.

"Blood-letting seems, in general, to have been considered too much in the light of a direct and absolute remedy for inflammation; as if, by emptying the vessels and lessening distention, it acted on and removed the immediate or proximate cause of the disease, or as if it needed only to be carried far enough in order to ensure its object. This is far from a proper view of the subject, while it leads to an improper and even dangerous practice. The loss of half a pound of blood, a quantity often sufficient for the cure of inflammation, can have no calculable effect in diminishing the tension of the vascular system, mechanically speaking. The vessels throughout the body are liable to far greater vicissitudes of distention and contraction, upon every partial change in the distribution of the fluids. It is in some other way therefore, and not merely by unloading the vessels, that blood-letting produces its good effects in the cure of inflammation. Nor is it by simply weakening the system; for there are many inflammations that are best treated by means the reverse of this; by remedies that give vigour to the system, and increase its activity.

"Inflammation occurs as readily, generally speaking, in weak as in strong habits; there appears even reason to believe, that the former are, in some respects, more disposed to it than the robust and vigorous. It seems to be a general law of the animal economy, that in proportion as the powers of the body are diminished, the susceptibility with regard to impressions, and consequently the disposition to be thrown into irregular action, are increased. Hence weakness, though never of

itself a disease, may predispose to it. But the diseases which arise under such circumstances are, in general, characterized by less activity, and go on more slowly to disorganization; and they commonly also require a less active mode of cure."—p. 282-7.

The succeeding observations, we conceive to be highly important and accordant to experience in opposition to theory; especially those which relate to the simultaneous use of blood-letting and stimulants, remedies too often considered incompatible.

"When inflammation arises in debilitated habits, it is often not only not curable by general blood-letting and other evacuations, if these are employed to any considerable extent, but appears even at times, to be rendered thereby more difficult of cure; and that, probably, for the reason above stated, namely, that weakening the system increases the disposition to irregular action, or predisposes to disease. The rule, however, is by no means constant, that blood-letting is improper as a remedy for inflammation in debilitated habits. On many such occasions, it is found to be scarcely less effectual than in a state of vigour. To determine in different cases when it may be proper or otherwise, is a difficult task, and requires much judgment and experience on the part of the practitioner. From my own observation, I am inclined to believe, that, when properly adjusted to the actual strength of the system (a point of the first magnitude, but which has been too much overlooked), there are few cases of inflammation that are not capable of being relieved by it, and that it may form a valuable auxiliary to other means, even to those of a tonic and stimulant nature.

"This, I know, is in opposition to received opinions, and will be supposed to involve an inconsistency, namely, the recommending at once blood-letting, and the use of tonic and stimulant remedies. The inconsistency, however, in this case is more apparent than real. If disease do not consist essentially in weakness simply (as has I think been clearly shewn), but in some unknown deviation from the natural and healthy mode of acting; then by possibility it may be obviated, and health restored, by remedies of either a stimulating or debilitating nature, and which have no right therefore to be set in opposition to one another on this occasion. In fact, whatever is capable of making any considerable impression on the system, or of changing its mode of acting, may become a remedy for its disorders: and hence means, apparently the most opposite, are often found to remove one and the same disease. Diseases accompanied with great debility have often been cured by loss of blood, and other evacuations; while those of an opposite character have, in many instances, yielded to the most active stimulants. A slight acquaintance with the history of physic, will serve to convince us of this. The practice of Sydenham was, in many respects, in direct opposition to that of Morton; the one employed bleeding, where the other gave the most active stimulants; yet there can be no doubt, that they both frequently succeeded in curing their patients.

"Of late, a division of inflammation has been made into two species, the active and the passive: the latter, being supposed to consist in a weakened action of the vessels of the inflamed part. If this be meant comparatively only, in relation merely to the more active form of the disease, it may be well founded; but if in comparison with the state of health, I believe it to be far otherwise. There is no inflammation in which there are not unequivocal marks of increased exertion in the part itself, however weak may be the general system. The phenomena are the same essentially, both in the active and the indolent forms of the disease, and differ only in degree. But a difference in degree merely, has never been allowed to constitute a diversity of species."—p. 287-90.

Our limits impose the necessity of omitting to notice the remaining parts of the work, in which the author has, in a similar manner, examined the effects of other remedies in the cure of fever; particularly with relation to the light which they are calculated to throw upon its nature. Such are vomiting; purging; sudorifics; epispastics; relaxants; antispasmodics; stimulants; cinchona; narcotics; cold; and mercury. The space assigned to these subjects is comparatively small; and, as we have already mentioned, they are discussed rather in connexion with theory than practice.

Although we differ on some important topics from Dr. Clutterbuck, in his theory of fever, we are not by any means inclined to withhold the tribute of praise so justly due for the dispassionate and intelligible manner in which he has advanced and supported it; neither are we so thoroughly bigotted to our own opinions, as absolutely to deny the possible correctness of those which he has presented to our notice. We think that he has perfectly succeeded in assigning the true *seat* of fever; and, if he should have formed an erroneous idea of its *nature*, it is at least satisfactory to know, that the mistake is not likely to lead to any bad consequences in practice; which must be looked to as the chief and final object of all our inquiries. Dr. Clutterbuck, indeed, may be said to have in a great measure the merit (in whatever light this may be viewed by his opponents) of establishing, if not of leading, the present practice in cases of fever; and practice, when successful, is always of more importance than the most ingenious theory.

ART. V.—*A New Supplement to the Pharmacopœias of London, Edinburgh, Dublin, and Paris, forming a complete Dispensary and Conspectus; including the New French Medicines, as well as Herbs, Drugs, Compounds, Veterinary Drugs, Patent Medicines, Perfumery, Cosmetics, and similar Articles kept in the shops, with their Composition, Uses, Doses, and Adulterations.* By JAMES RENNIE, A.M., Surgeon; Lecturer on Chemistry and Natural History, London. 8vo. Lond. 1826, Baldwin, Craddock, and Joy.

In the preceding Number of this Journal a specimen of the "New Supplement to the Pharmacopœias" was inserted, from which its general plan might be partially understood. We take this opportunity of introducing here a further selection, which will explain more clearly the intention of the work.

SPECIMEN OF ARTICLES CONTAINED IN THE LONDON PHARMACOPŒIA.

PLUMBI ACETAS L.E.D.P. Acetate of lead, or Sugar of lead, *Saccharum saturni, Cerussa acetata,* and *Superacetas Plumbi,* O. Take ℔j. of subcarbonate of lead, (white lead) Oj. of acetic acid, Ojss. of boiling distilled water; mix the acid with the water, add the subcarbonate of lead by degrees, and boil the whole till the acid is saturated, then filter through paper, and having evaporated it till a pellicle appears, set it aside that crystals may form, pour off the liquor and dry the crystals on blotting paper.

Decomposition. The acetic acid decomposes the subcarbonate of lead by its having a greater affinity for the oxide of lead, than the carbonic acid, which is set free and escapes with effervescence, while the acetate of lead is formed, and remains in solution; and the crystals thence formed are the pure acetate. It was formerly thought to be a superacetate, because it reddens vegetable blues, but this probably depends on some decomposition, as the minutest portion of carbonic acid in water precipitates carbonate of lead, and disengages acetic acid. When a current of carbonic acid gas is passed through a solution of the acetate, it precipitates one half of the oxide of lead and leaves a deuto-acetate in solution.

Soluble in alcohol spec. grav. 2.345 in 24 or 25 parts of water hot or cold but is partially decomposed even in distilled water, without the previous addition of a little acetic acid.

Incompatible with all the acids which form insoluble compounds with the oxide of lead, viz. the carbonic, citric, muriatic, sulphuric, and tartaric, acids; also with alkalies and alkaline earths, and with the salts containing any of these when the known affinities will produce decomposition, such as hard water, because it contains carbonate and

sulphate of lime sea water ; because it contains muriate of soda and magnesia ; and soap, because it contains carbonate of potass or soda. The solution of acetate of ammonia also decomposes it, and all the carbonates, muriates, sulphates, sulphurets, and tartrites, such as sulphuretted hydrogen, tartarized antimony and iron, alum, borax, lime water, and tannin, and of course all vegetable astringents. When the solution is exposed to the air, it gradually absorbs carbonic acid, and carbonate of lead is formed.

Externally it is a most valuable application, as a cooling sedative and astringent, dissolved in distilled water for ophthalmia, burns, and superficial phlegmonous inflammations, and as an injection in gonorrhœa, and leucorrhœa. The proportions are from gr. x. to gr. xxx. to ℥viij. of water; ℥j. to ℥vj. of water proves stimulant. It is scarcely safe, when the skin is abraded.

Internally it is a powerful but unquestionably a hazardous astringent in protracted diarrhœa and obstinate hæmoptysis, and internal hæmorrhage of the lungs, uterus, stomach, &c. In desperate cases it ought not to be omitted, but notwithstanding the authority of Dr. Paris, I must enter a strong protest against its exhibition, till every safer means have been unsuccessfully tried. When it is resolved to give it, opium must be conjoined with it (say gr. ss. each of acetate of lead, and opium in form of pill), to prevent spasm and paralysis. Care must also be taken not to give with it, nor after it, any acids, astringent infusions,—sulphates, none in short of the incompatible substances unless it have been incautiously given in an over dose. I should have thought Mr. Brande understood Chemistry better than to prescribe it with rose water. Thomson prescribes it with rose water for hooping cough ! ! !

Poisonous, producing a sweet metallic taste in the mouth, constriction of the throat, inflammatory pain in the stomach and bowels, excruciating colic, vomiting, occasionally bloody, cramp, convulsions, paralysis, and death. The best antidote is sulphuric acid diluted, and drank copiously with the black draught or sulphate of soda well diluted.

Tests. Calcination with charcoal will produce metallic lead ; sulphuric acid will precipitate it white ;—chromic acid or chromate of potass of a canary yellow ;—and sulphuret of potass of a dark colour.

Adulterated but seldom, and generally to be had very pure of the wholesale manufacturer. When genuine it looks like lumps of sugar, but composed of colourless crystals without smell, and of a sweet and astringent taste. If it do not dissolve entirely in distilled water, it is not pure.

Plumbi Carbonas, E. P. (see Plumbi Sub-carbonas.)

Plumbi Oxydum Semivitreum, L. E. Litharge. *Lithargyrum* D. *Oxidum Plumbi fusum*, P. This is procured by means of heat from melting red lead, and allowing it to cool, during which process it combines with carbonic acid, and forms the yellow protoxide of lead, which is litharge. It is in scales or flakes of a glassy lustre,

and of course it cannot well, as Mr A. T. Thomson asserts, be "often adulterated with other oxides." In pharmacy it is only used in making plasters, being a powerful astringent.

Used extensively to improve sour wines, which it does by forming acetate and tartrate of lead with their acetic and tartaric acids. For the means of detecting this, see the preceding article under *Tests.*

Poisonous like the preceding, which see.

PLUMBI SUB-CARBONAS, L. Subcarbonate of lead, or white lead.

Carbonas Plumbi, E. P. *Cerussa,* D. Flake white. Dissolve litharge in weak acetic acid, and pass a stream of carbonic acid gas through the solution. Or expose spiral rolls of sheet lead to the fumes of vinegar by placing the vessels in warm dung or in a steam bath. Or add an alkaline carbonate to a solution of nitrate of lead.

Chemically it contains 83.5 of the yellow oxide of lead, and 16.5 of carbonic acid, and is therefore a carbonate, and not a sub-carbonate. It is soluble in pure potass and in nitric acid, but not in water.

Medicinally it is only used as an external application for dusting excoriations, &c., as an astringent and sedative, though it is by no means safe as it is often absorbed, or acts on the nervous system, producing colica pictonum or painter's colic, which indeed derives its name from painters who use this substance, being afflicted with it. It is a very dreadful disorder, often ending in palsy, and is best combated by opiates and the means recommended in the preceding articles for lead poison, see also Dr. GOOD'S *Study of Medicine.*

Poisonous, like the preceding.

Adulterated with several white and heavy substances, such as whiting and chalk, which may readily be precipitated when dissolved in vinegar by oxalate of ammonia, which will throw down oxalate of lime. Carbonate of barytes will be decomposed by adding to the solution in vinegar, a weak solution of Glauber's salts in distilled water, and sulphate of barytes will be precipitated, which sulphate of barytes, as well as sulphate of lead when used to adulterate flake white will dissolve in boiling distilled vinegar, while the carbonate of lead will not. White lead, when genuine, ought to be completely soluble in nitric acid, and ought to continue transparent when a solution of sulphate of soda is added.

OPIUM. L. E .D. P. The concrete juice of the white poppy, *Papaver somniferum.* A native of the South of Europe and of the East. The term is derived from the Greek οπος, which simply means juice. There are 40,000 lbs. annually imported into London alone.

Procured by planting the young poppies in rows about six inches asunder, and at first watering them abundantly When six or eight inches high, they are richly manured, and again watered abundantly as they are about to flower. When the capsules or germens are about half grown, the collection of the opium commences, by making in each at sun set, two or three longitudinal incisions, taking care not to penetrate through to the cavity where the seed is lodged. Through

these incisions the juice flows, and as it concretes, it is removed and put into earthen pots, being afterwards dried in the sun. It is then formed into balls or cakes, and wrapped up in poppy or tobacco leaves, and again farther dried.

Chemically, opium contains the two active principles of MORPHINE and NARCOTINE, the first in combination with MECONIC ACID in the form of meconate of morphine. Besides these, it contains a sort of gum, gluten, and volatile oil, and also a little sulphate of lime, but always more or less impurity, frequently as much as one fourth or one third.

Soluble in water, æther, and alcohol, but much more so in vinegar, lemon juice, or any of the vegetable acids in solution, on which principle it is that the black drop, the liquor opii sedativus of Battley, Rousseau's drops, &c. are prepared.

Incompatible with infusion or tincture of galls, infusion or tincture of bark, alkalies and alkaline carbonates, acetate and supersulphate of lead, corrosive sublimate, nitrate of silver, and the sulphates of copper, iron, and zinc. It is also improper to combine it with stimulants when it is intended as an anodyne. (ORFILA.)

Internally, opium ranks high as a narcotic, sedative, and anodyne; but it usually acts first as a stimulant, and the sedative and narcotic effects are apparently the consequent collapse of the system as the sequela of excitement. Some maintain that it acts directly as a sedative without the intervention of excitement. It decreases the secretion of most of the glands, such as the kidneys, the parotids, the liver, and it produces constipation of the bowels, and sometimes diminishes though at other times it increases, the cutaneous perspiration. When it excites, the first feelings are heat of the body, thirst, absence of mind, and sometimes headache and vertigo. Afterwards exhilaration of mind, removal of pain, ending in drowsiness and sleep, which is usually disturbed with painful dreams. On awaking, nausea, languor, and feverishness often succeed. It is also a powerful antispasmodic and astringent. In the East and on the Continent it is reputed to be one of the best aphrodisiacs. When frequently taken, the effects diminish, and the dose, in such cases, must be increased to produce the desired effect. It is likewise a powerful corrigent of other medicines.

Improper where there is much inflammation or a tendency to it, as in hard dry cough; and in the diathesis called bilious it seldom agrees, probably because there is a tendency to hepatitis. There are many individuals, also, who cannot bear opium from some peculiarity in constitution. In diminished glandular secretion also, such as in obstructions of the liver and kidneys, costiveness, and thirst, opium is seldom elegible. Young children ought not to take it unless in great emergencies.

Dose gr. $\frac{1}{4}$ to gr. ss. when prescribed as a stimulant;—from gr. j. to gr. iv. when given as an anodyne; and even this dose may be exceeded in cases of hæmorrhage, and when it is employed as an antispasmodic.

When the system becomes callous to ordinary doses, it ought to be discontinued for a time till it recover the sensibility to its influence. This is particularly necessary to be attended to, when it becomes a daily necessary in incurable and painful disorders, such as carcinoma, tic-douloureux, stone, &c.; some opium eaters have taken doses of ℥iij.

Prescribed in small doses as an excitant in typhus and atonic and gangrenous states of the system, and to diminish secretion in diabetes, diarrhœa, menorrhagia, serous ulcers, &c. and at the period of weaning, to stop the milk in the breasts. In larger doses to allay pain, and nervous irritability wherever it can be done without the danger of producing or increasing inflammation, as in chronic rheumatism, nervous pains, gout, gravel, stone, carcinoma, malignant fungus, aneurism, fever, intermittents, &c. attending to the cautions above, and particularly to the state of the bowels. In coughs it is invaluable when judiciously managed, and in all spasmodic disorders, such as chorea, hysteria, tetanus, &c., it is the most powerful drug known. It is for this reason that it is so useful in asthma, cholera, hiccup, vomiting, many coughs, pyrosis, &c. which are partly spasmodic.

Combined with other medicines the powers of opium are often wonderfully increased, or rendered more useful, so much so indeed, as to be available in almost every disease in some of its stages. Mercury, for example, is prevented by opium from passing off by the bowels; and when opium is combined with ipecacuan or antimonials, the effects are directed almost entirely to the skin, as in the case of Dover's Powder, one of the best sudorifics known. Combined with vegetable acids, such as the citric, the sedative powers of opium are greatly increased, and its more disagreeable effects greatly obviated.

Over doses of opium, when not going the length of serious alarm, may be combated at first by bitters, such as infusion of camomile or wormwood, in moderate doses, or what is still better strong coffee infused—not boiled. Vinegar and vegetable acids have been recommended, but it appears that this is improper at first, though useful in the after treatment. When sleep or drowsiness is protracted so as to cause alarm, exciting the system by hot brandy and water, and affusion of cold water will be proper.

Poisonous, producing, in large doses, giddiness, drowsiness, stupor, and afterwards delirium, paleness of the countenance, cold sweats, deep breathing, convulsions, apoplexy, and death.

Treatment. Evacuate the stomach as soon as possible, by means of the stomach pump, or an emetic of sulphate of copper or zinc, in the dose of gr. x. dissolved in ℥j. of warm water, and repeated if necessary in twenty minutes, but with as little water as possible. If the emetics will not operate, effusion of cold water will sometimes quicken their operation. When the stomach has been evacuated, if the drowsiness continue, strong coffee, vinegar and water, hot brandy and

water, æther, bleeding from the jugular vein, and the cold affusion, or the warm bath will be proper, followed by tonics and purgatives.

Tests. There are no certain tests of the presence of opium, though it may be readily detected by its peculiar smell, or by separating from it the MORPHINE and NARCOTINE by the methods given under those articles.

Externally opium is sometimes said to be advantageously applied in form of ointment, or liniment as over the stomach to allay vomiting or spasm; along the spine, in convulsions, &c.; but it is not I think to be trusted to alone. In form of enema or suppository, it is often powerful in dysentery and diarrhœa, and in form of a watery injection in spasmodic stricture, gonorrhœa, leucorrhœa, &c. Applied to a hollow tooth it sometimes eases toothache. It may also sometimes give relief to painful sores, such as open cancer, malignant fungus, irritable stumps after amputation, &c.

Adulterated so very extensively that little opium altogether genuine is to be found, as the high price is an irresistible temptation to fraud. Pieces of lead and small stones are often found imbedded in the best opium to increase the weight, and all sorts of extracts and substances the least likely to be detected, are mixed with it, from the extract of poppies or of liquorice to the dung of sheep and oxen. Extracts of belladonna, hemlock, and other narcotics are sometimes added, but more commonly aloes, gum arabic or tragacanth, or extract of celandine and lettuce.

Bad opium wants the peculiar narcotic odour, or smells of empyreuma; is friable or soft, full of dark brown, or black patches, or is all of a deep black, marks paper with a continous brown streak, tinges water yellow, easily melts when exposed to heat, and tastes sweetish.

Genuine Opium smells heavy and narcotic, has a very disagreeable bitter taste, with a warmish and subacrid after-taste. It is of a deep rich fawn or brown colour, of a tough and plastic consistency, and of a smooth uniform texture, marking paper with an interrupted streak. It has a spec. grav. of 1.336, which is one of the best tests of its purity, as few vegetable products are so heavy, if we except gum arabic and opoponax.

Turkey Opium, which is the best, is imported in flat cakes of a solid form, with fragments of leaves, and the reddish seeds of some sort of dock adhering to it. Its solution is not disturbed by that of the acetate of barytes or of oxalic acid, and consequently it contains no sulphate of lime. The inferior sorts have none of the reddish seeds adhering to them.

East Indian Opium is in rounded masses of a darker colour, and more smooth and soft texture, with a burnt smell, and a less bitter but more nauseous taste. It is wholly soluble in water, and therefore contains no gluten. It gives a precipitate with oxalic acid and with acetate of barytes, and therefore contains sulphate of lime. It contains one-third less morphine than Turkey opium, and is therefore so much weaker.

English Opium has lately been partially cultivated, and externally it is like the East Indian, but lighter in colour, though in quality it is said to equal the Turkish. This, however, would seem to depend very much on the seasons. For the account of its culture, see *Edinb. Phil. Journ.* II. 262, and *Brande's Journ.* IX. 69. I am afraid that we have little chance of succeeding in making its cultivation very extensive or lucrative.

SPECIMEN OF ARTICLES CONTAINED IN THE PARIS CODEX.

"MORPHINE or MORPHIA, P. *New.* A chemical alkaline substance found in opium, and possessing its sedative properties in a high degree. Several processes are given for obtaining it, and two are adopted in the Paris Codex.

Robiquet's method, P. Macerate 300 parts of pure opium cut small, in 1000 parts water for five days; strain and add 15 parts of very pure magnesia, boil the whole for 10 or 15 minutes, filter, wash the grey precipitate with cold water, dry it and digest it in weak warm alcohol, to remove the colouring matter; then collect it on a filter, boil it in highly rectified alcohol, filter the solution while hot, and, as it cools, crystals of morphine will form.

According to this process, the meconate of morphine existing in the opium is decomposed, the meconic acid going over to the magnesia, which is precipitated along with the morphine, but is separated by the boiling alcohol.

Sertuerner's method, P. Dissolve 500 parts of opium in water, allow it to cool, and add 160 parts or more of solution of ammonia, so this may be in excess; strain through paper, collect the crystals, wash, dry, and dissolve in hot sulphuric acid, diluted with eight times its volume of distilled water. This will form sulphate of morphine, from which ammonia will separate the morphine in the form of a very white pulverulent substance, which being dissolved in boiling alcohol, will deposit morphine in crystals as it cools. The salt thus obtained is impure.

Brande's method. Triturate powdered opium into a thin paste with acetic acid, and then add six or eight parts of water; filter through coarse paper, treat the residue with a small additional portion of acetic acid and water as before; add excess of ammonia to the filtered liquors, and collect the precipitate thence obtained on a filter; evaporate the filtered liquor to one-fifth its bulk, add a little more ammonia, which will give a second precipitate that is to be added to the first. These precipitates are impure morphine, and the impurities are to be separated by digesting in cold alcohol, while the residue dissolved in boiling alcohol will, on cooling, give crystals of pure morphine.

Pure morphine is colourless, bitter, inodorous, almost indissoluble in water, but soluble in æther, and in boiling alcohol; and unites with the acetic, hydrochloric, and sulphuric acids, forming crystallizable salts, which are the best forms of exhibiting it medicinally. It is given in doses of gr. $\frac{1}{8}$ to gr. $\frac{1}{4}$; but the ACETATE (which see) is preferable, from being more soluble.

Poisonous in large doses, producing all the effects of an over dose of opium; such as drowsiness, paralysis, and death. The best treatment will be a quick emetic, hot brandy, cold affusion, volatile salts to the nostrils, &c.

Tests.—Nitric acid turns it red, and is therefore an important test.—See Beck's *Med. Jurispr. Appendix.*

Muriate of Gold, Murias vel Chloruretum Auri, P. Take 100 parts of pure gold, finely divided, 300 parts of nitro-muriatic acid, composed of one part nitric acid and two parts muriatic acid; put this in a vessel on a sand-bath moderately heated, till the gold is quite dissolved; then evaporate to dryness with a very gentle heat in a porcelain or glass capsule. If the heat is strong, the acid will separate, and the metallic gold will appear. Keep it in a phial closely stopped.

Decomposition. The chlorine of the acid is separated, and goes over to the gold, while the nitric acid escapes.

Medicinally the muriate of gold has lately been tried in France to a considerable extent, for chronic venereal affections, exostoses, glandular swellings, schirrous and strumous. The dose is gr. $\frac{1}{8}$ to gr.ss. rubbed upon the tongue or the gums, along with a little liquorice powder; or in form of a pill, gr. $\frac{1}{16}$, made with extract of mezereon.

Poisonous in large doses, producing the same violent symptoms, as corrosive sublimate.—See Hydrarg. Oxym.

We shall only give one other specimen taken from an article which is used both as a medicine and as a perfume.

Moschus. L. E. D. P. Musk is a peculiar concrete substance, procured from the musk deer, *Moschus moschiferus*, a native of the East, and from the musk rat, a native of America. It is imported in the natural bags, which are taken from behind the navel of deer, and are about the size of a pigeon's egg. Those from China are thin, and covered with brownish yellow hair; those from Russia and Bengal are thick, and covered with *white* hair, being probably taken from old animals. It is chiefly used as a perfume.

Chemically, musk contains resin combined with the odoriferous volatile oil that gives it perfume, besides several animal matters. It is soluble in sulphuric æther, and in boiling water, and also in alcohol and sulphuric acid, with the loss of its odour. Added to other odoriferous substances, such as lavender water, it increases their odour, as ammonia often does from its volatility.

Incompatible with infusion of bark, sulphuric acid, corrosive sublimate, nitrate of silver, and the sulphates of copper, iron, and zinc.

Medicinally, it is reputed to be one of the strongest antispasmodic, non-irritating stimulants, (though many doubt its powers;) and with this view has been given in doses of gr. x. to ℈ss. in form of pill, bolus, or mixture, along with æther, camphor, or ammonia, for hysteric paroxysms, subsultus tendinum, epilepsy, chorea, hooping-cough, gout in the stomach, &c. In bad cases of phagedena and gangrene, particularly from siphilitic and strumous causes, it has been found ex-

cellent for arresting sloughing. (WHITE.) Its failure may often arise from its being adulterated.

Imitated by dropping ʒiijss of nitric acid on ʒj. of rectified oil of amber. In the course of a day a black substance is produced, which smells similar to musk.

Or, Take two parts of any fœtid animal oil, procured by distillation, and one part of nitric acid, digest for eight or ten days; add gradually thirty-two parts of rectified spirit of wine, and digest again for four weeks. The substance thus produced is very like genuine musk.

Adulterated very extensively with dried blood, asphaltum, and a sort of gritty resin. In China musk, the bags are often cut open between the hair, part of the contents abstracted, and the deficiency made up with dried blood rolled up into pills, so as to imitate the true grains of musk. The bags ought, therefore, to be carefully inspected, to detect such openings, which are always very neatly closed. The presence of dried blood may be known by its emitting a fœtid vapour like burnt horn on burning, when held over a candle on the point of a thin knife. When asphaltum is present, it will melt, and run on the knife point before it inflames; while genuine musk does not melt, but is turned into charcoal. Punctures are also often made in the bags, which are difficult to detect, and through which sand, small stones, and even pieces of lead and barytes are introduced to increase the weight. These are easily discovered on opening the bags. Other musk dealers, less fraudulent in spirit, leave the bags in a damp place to increase their weight, and this also injures the musk. The musk from Holland is brought in leaden pots sewed up in canvas, and is nothing more than dried blood mixed with a little oil and tincture of musk. It is generally very moist, and exhales a disagreeable urinous smell. The artificial bags may be known from the genuine by wanting the internal membrane or skin. It is also adulterated with spikenard, chocolate, aloes, nutmegs, storax, &c.

Genuine musk, from China, is of the colour of an old brown nutmeg rolled up in little round friable pills. Russia musk, even when good, is not in form of pills, but loose in the bag, and has a urinous odour."

From these specimens of the work our readers will be able to judge of its execution and its utility.

ART. VI.—*Further Observations on the Lateral or Serpentine Curvature of the Spine, and on the Treatment of Contracted Limbs; with an Inquiry into the Effects of various Exercises, and other Means, which are used to Prevent or Cure these Deformities: being a Supplement to the Work on Distortions of the Spine, and Bones of the Chest.* By JOHN SHAW, Surgeon, and Lecturer on Anatomy. pp. 195. 8vo. Lond. 1825.

In a former Number, we had occasion to go over the precursor of this volume. Mr. Shaw seems to have found the subject prolific in some shape or other, at least we would infer so from this second publication; but we can scarcely persuade ourselves that it was the accumulation of new facts or new views which prompted him to go again to press; for, on looking over his "Further Observations," we can hardly persuade ourselves that we are not reading his first work. We frequently indeed meet with, not only the same subjects, the same facts, the same reasonings, and the same illustrations, even to the plates, but sometimes with the same language. We shall illustrate this mode of book-making by a quotation from each of the two works. In the first work Mr. Shaw says:—

"It may be observed that the ligaments of the ankles of some of the most admired dancers are so unnaturally stretched, that in certain postures, as in the bolero dance, the tibia nearly touches the floor; so bad indeed is the effect occasionally produced by frequent stretching of the ligaments, that the feet of many of them are deformed; for the ligaments which bind the tarsal and metatarsal bones together, become so much lengthened by dancing, and standing on the tips of the toes, that the natural arch of the foot is at last destroyed. This effect is very evident when the dancer is obliged to bring his heels to the ground, as in walking the streets; he then appears lame, the position having become almost unnatural to him." He adds, in a note, "The gait of an opera-dancer, in walking, may be said to resemble, in some respects, that of a bear dancing; for this animal which, like all other quadrupeds, walks on the tips of his toes, when obliged to *dance*, must bring his heel or os calcis to the ground."—p. 18.

In his "Further Observations," Mr. Shaw echoes this passage, and interweaves it with something like a commentary, as follows:—

"If any exercise, however good, be continued for a long time, and regularly repeated while a young person is growing, certain ligaments may become unnaturally lengthened and elastic. As, for example, we

may observe that in the bolero dance, upon the stage, some of the performers nearly touch the floor with the inner ankle, which is a feat that no person with a fine and strongly formed ankle is capable of.

"We find, on examining the foot of an opera-dancer who can do this, that all the ligaments of the foot, and especially the lateral ligaments of the ankle, are so unnaturally long, that the foot can be turned in every direction as easily as the hand. The bad consequences resulting from this looseness of the joints, do not appear when the performer is dancing or strutting along the stage, as the muscles of the leg are then in an artificial state of exertion, and for a time preserve the bones in a proper relation to each other; but the effect is quite obvious when the dancers are walking in the streets, for then, while attempting to walk naturally, they have distinctly a shuffling gait. This is particularly observable in old dancers, who have retired from the stage, for the muscles having by disuse lost their tone, the bad effects of lengthening and straining the ligaments are then distinctly marked. Indeed, these evils are not confined to a peculiarity of gait, for the feet of almost every opera-dancer, excepting those called the *pantomimes*, are deformed, and even some of the dancers, while in full vigour and most admired, are actually lame. This may appear a bold assertion, but if a high instep be important to a well-formed foot, these dancers' feet are deformed, for, with few exceptions, they are quite flat; and that they are lame cannot be denied, as they have almost all, a halt in their gait. If we consider the manner in which they are taught, we shall not be surprised at this. They commence their discipline at a very early age, and their sole endeavour, for six or eight hours daily, for many years, is to stretch the ligaments of the feet and ankles. This is done in various ways, but chiefly by standing for hours on the tips of their toes, their only respite being occasional attempts to push the ankle bones towards the floor. In this way the power of the muscles is soon exhausted, and the whole weight of the body being then sustained by the ligaments, they must yield; and hence those which bind the bones of the foot together become unnaturally lengthened. As a necessary consequence of the stretching and elongation of these ligaments, the bones are separated from each other, and the feet are thus rendered nearly as flat as those of a monkey. Although the shuffling gait and the lameness apparent in walking depend principally on the condition of the ligaments and of the muscles forming the calf of the leg, they may, in some degree, result from the dancer being so much accustomed to move on the tips of his toes, that it has become almost unnatural for him to bring his heel to the ground. Indeed, the gait of an opera-dancer in walking may be said to resemble, in some respects, that of a bear dancing; for this animal, which, like all other quadrupeds, *walks* on the tips of his toes, when obliged to *dance*, must bring his heel, or os calcis, to the ground."—p. 130.

We do not know for what reason Mr. Shaw has thus repeated himself; for we cannot agree with him that "their immediate

connexion with many of the points in question" can form "a sufficient apology for the repetition," as it obliges the purchaser to buy what he already possesses. But we shall let this rest, and proceed to consider the subjects in the order in which Mr. Shaw has introduced them.

Symptoms and Effects.—It is a point of some consequence to determine where the lateral or serpentine curvature is first manifested; and on this subject Mr. Shaw thinks that Ward, Bampfield, and other recent authors, are mistaken in saying that the deformity commences in the dorsal portion of the spine, and only affects the cervical and lumbar portions secondarily.

"In consequence," says Mr. Shaw, "of the alteration in the state of the shoulders being the first symptom of deformity observed, it is generally, but erroneously, supposed that the dorsal part of the spine is the first distorted. Indeed, those who have lately written on this subject have fallen into this error, and have described the curve at the loins as the last which is formed. In cases of *diseased* vertebræ there may be a curve only between the shoulders, but it invariably happens in the common lateral curvature, that where one shoulder is protruded, there is also a curve at the loins; and I have shown by diagrams in the preceding volumes that this curve is not only the first formed, but that those in the upper part of the spine are consequent upon it. When the practitioner, under the idea that the dorsal part is the first affected, directs his attention principally to it, he is apt to neglect the root of the evil; for as the upper curves are the consequences of the lower, it almost necessarily follows, that if the lumbar part can be made straight, the dorsal and cervical vertebræ must also become so; if they did not, the head would be carried to one side. By taking this view of the formation of distortion, I was led to attend more to the means of remedying the curve at the loins than that at the shoulders, and I have found by experience that I was practically right; for the only instances where the amendment of the curve between the shoulders has not followed the removal of the bend at the loins, have been where the upper ribs were much misshapen, or where anchylosis had taken place between two or three of the dorsal vertebræ; but even in those cases, the curve which remained between the shoulders has been so short and so acute, as to have little effect on the general figure. It is the curve at the loins, much more than that higher up, which gives the peculiar appearance to girls who are distorted; for, as this curve is near the base of the column, it throws all the parts above out of their natural line, and also affects the motions of the legs, as the great muscles which rotate and move the thighs forward rise from this part of the spine. This is probably the cause why girls, who are only slightly distorted, generally turn one toe out, and the other in, while walking or running.

"The above description will be found to correspond with the condition of the spine and ribs when the distortion is very slight; but a little

increase in the curvature of the spine produces a considerable change in the general appearance. The effect is most remarkable in the alteration of the position of the right scapula; for this bone, instead of being farther removed by the increase of the curve, is brought nearer to the spine; and hence, although the right shoulder be higher than the left, it is not now so broad."—p. 7.

Mr. Shaw is also clearly of opinion that (notwithstanding the doctrines generally received) in the common lateral or serpentine curvature, the muscles do not produce the distortion, but become altered in form in consequence of the distortion. This is an opinion, he thinks, not merely of physiological curiosity, but of practical importance in the treatment of distortions of the spine and contractions of the limbs; for it will be found that if bones can be kept at a distance from each other, the shortened muscles will be lengthened. It is owing to their ignorance of this fact, that shampooers and rubbers are not so successful in remedying contracted joints as they might be.

It has been asserted, by Mr. Ward and others, that distortion takes place in consequence of the muscles on the concave side being increased in strength, while the power of those on the convex side is diminished. The proof alleged of their being increased in power, and also of their having been spasmodically or morbidly contracted, is that their fibres on the concave side are shortened. This erroneous idea seems to have arisen from the consequences of distortion having been mistaken for the cause. If the two ends of a muscle are approximated, the muscle becomes gradually shorter—a fact which can be copiously proved by cases. This shortened state of muscles has been called a disposition to contraction,—a kind of spasm which pulls the bones towards each other; but there is no proof that the muscles of the back are ever affected in this way in cases of distortion. The shortening of the muscle, indeed, is the natural result of the approximation of its two extremities; and there is an actual diminution of bulk rather than a growth.

Mr. Shaw says that it is "an opinion frequently expressed by surgeons of eminence, that if the general state of the health be attended to, a girl may outgrow such a degree of distortion; but there cannot be a greater mistake, nor one which may lead to more serious consequences to the patient. My experience in such cases affords proofs in direct contradiction to the above opinion, and I appeal to the generality of medical practitioners, whether they have not known many instances where the curvature, instead of diminishing as the girl grew up, became worse? It must indeed be obvious to all who have attended to the subject, that if the disposition to curvature be not counteracted, in a girl growing at the rate of an inch in two or three months, the new

growth, instead of adding to the height, will only add to the degree of distortion. Such I affirm to be the fact; and although this positive style may be objected to, those who have had opportunities of seeing the effects of the contradictory opinions on the nature and treatment of slight curvatures of the spine will admit the propriety, and even the necessity, of such a statement.

"A spine slightly distorted, in a growing girl, may be made straight; but if it be neglected, (however great may be the attention to the state of the health), the curve will become rapidly worse; and if it be permitted to increase to such a degree as to render the ribs angular, it is very doubtful whether a perfect restoration of the form can ever be effected." —p. 18.

Causes.—The causes which are most usually assigned for spinal distortions are malpositions, bad health, and school confinement. Upon these two points, as well as others, the author makes some very judicious observations. With respect to bad health he remarks—

"There is no doubt that some kinds of deformity are produced by disease; but many circumstances might be offered to show that the *lateral curvature* of the spine seldom proceeds from this cause. Its frequent occurrence among girls who scarcely ever had a day's illness, is strong evidence of this. We may also adduce the fact, that although the poor in large towns are subject to various diseases of the spine, yet in that class, the description of lateral distortion which is so frequent among young ladies is rarely seen; and when it does occur among the poor, it is generally accompanied with some acute disease of the vertebræ, or is, to a great extent, combined with rickets, or a distinct scrofulous affection of one of the limbs. I have had many opportunities of observing this combination of symptoms among the out-patients of Middlesex Hospital, and I believe that this opinion is corroborated by the condition of the children in manufactories.

"When there are many of the children in one family crooked, we must suspect that this distortion proceeds from a peculiarity of constitution, and may even be hereditary like certain other symptoms. But it more frequently happens, that instead of lateral curvature being a *family* disease, there is among six or ten children only one of the daughters who is crooked. This fact is so common, and the occurrence of curvature of the spine without any accompanying symptom of bad health, is so frequent as to convince us, that what is commonly called lateral curvature is seldom produced by disease, although those who are of a delicate constitution may be more liable to it. One of the most important and difficult questions in practice, is to distinguish between the cases where a scrofulous taint in the constitution is the predisposing cause of distortion, and those in which the curvature of the spine is solely owing to fortuitous circumstances. I hope to be able to show that much good may be done in both descriptions of cases; but if the distinction between them is not made we shall be frequently mistaken in our prognosis."—p. 29.

After showing that these distortions are not so common in warm climates, because education is more natural; for stiff stays neither are nor can be worn, and though little exercise is taken by females, yet they are allowed to lounge away much of their time in a recumbent position, our author goes on to show the bad effects of a contrary practice in this country, where the exercises now becoming fashionable are either carried too far, or when little exercise is allowed, and the muscles consequently feeble, the girl is compelled to maintain for many hours an erect position, which the muscles are inadequate to sustain. We shall give the author's summary of the causes of distortion.

"The first cause which I would assign is the want of sufficient general exercise, and especially of that which acts more immediately on the muscles of the back; the second, on the almost necessary yielding of the lumbar portion of the spine to the weight of the upper part of the body, if the girl be allowed to sit at work, or practise at the piano-forte for hours without any artificial support; the third cause I would name, is the habit of lounging or balancing the body on one leg; the fourth, the habit of sitting awry while writing or drawing; the fifth, the habit of sleeping on a soft bed and with a high pillow; the sixth, the more frequent use of the right than of the left arm; and, lastly, I would assign as a cause of curvature most of the attempts that are made to correct the figure, or to model it into a certain form. As so many of the means employed for this purpose, and for counteracting what are considered the disposing causes to distortion, frequently increase and even produce the curvature, it may be useful to endeavour to exhibit these effects."—p. 38.

Treatment.—Under this head the author discusses at some length the use of the inclined plane; stays and braces; manner of sitting; means employed for curing a stoop; and the effects of certain exercises on the form. To these topics we shall now briefly allude.

Case.—The daughter of a gentleman who had had the best medical advice, after having run the gauntlet of fashionable treatment, was put under the care of our author.

"I found the young lady, who was about 15 years of age, reduced to such a state of weakness, that when she attempted to rise, that I might examine her spine, she fainted; she was then unable to walk, or even to stand without support. As far as I could judge from her history, this debility was owing solely to long confinement in one position —(she had lain on her back for two years). In this case, the system of restraint, and of preventing all action of the muscles of the back, had been carried to a degree scarcely credible; for when she went to bed, or from that to her couch, she had always either been carried or rolled off from one to the other. Instead of the curvature of the spine having been removed by this system of treatment, it had been in-

creased; indeed it was scarcely possible for any one to be in a worse condition. The ribs were distorted to an extraordinary degree; and this, I have no doubt, was caused by the constant pressure of the shoulder against the board, which I have, in the preceding volumes, shown to be as hurtful as the pressure made by machinery. It appeared that her debility was the effect of confinement, not of disease; for having put her on an entirely different plan of treatment, she became, *in the course of a few weeks*, as robust and active as any girl of her age." —p. 49.

In a note we meet with the following judicious remarks on the effects of friction in obviating the evils of confinement to the inclined plane for months and years:—

"The bad effects of lying constantly in one position on the inclined plane, are so much obviated by friction over the muscles of the back, that a slight curvature may be cured in this way. But why do those who lay a patient on a board for months, with the view of subduing an inflammation of the bones, and restoring the equilibrium of the actions of the muscles, recommend the spine and adjacent parts to be rubbed and shampooed for two hours during the day? Is it not contrary to their theory of the causes of distortion, and to their views of the mode of curing curvatures? But, so far am I from objecting to the combination of friction with rest, that I consider it as the only means of saving patients, who are laid on the plane, from falling into the most miserable state of debility. Since friction and shampooing are only a form of exercise, why not carry the system of combining exercises with the confinement, a little farther, and especially if it can be done with safety? It is cruel to imprison a young lady for months, if all the advantages of lying on the plane may be attained, and the disadvantages avoided, without making her undergo such severe discipline as the constant confinement to one position must be."—p. 66.

In allusion to the well-known case of Colonel S—, detailed by Dr. Harrison, in the Medical and Physical Journal, Mr. Shaw very properly remarks—

"It may appear almost incredible, that such an attempt was ever made in this country; but we have the best evidence of its having been done, that of the operator himself, and I can state that a mode nearly similar, although even more frightful, has been practised in London by the same operator within these twelve months. I have been consulted by several patients, who had not only been rigidly confined to the horizontal position for two years, but had submitted almost daily, during that time, to be laid for an hour on their face, to have the feet fastened to one end of a bed frame, while a cord, that was attached to a strap round the back of the head, was wound up by a windlass that was fixed to the other, and which, from its appearance, seemed to be of sufficient power to raise half a ton. I was told that while the spine was thus stretched, the physician tried, with a small wooden instrument, to *push*

in the dislocated bones! Cases, detailed by this operator, to shew the *wonderful* effects of this plan of practice, may be found in the 44th and 45th vol. of the London Medical Journal."—p. 72.

This practice, founded on the theory of the dislocation of the vertebræ, is not only so inefficacious but so dangerous, that it is the duty of every writer on the subject to expose it; and we think Mr. Shaw has acted very properly in so doing. But he perhaps has forgotten that he himself recommended weights to stretch the body, while the shoulders were to be fixed with cords. See Shaw on the Nature and Treatment of Distortions.—pp. 241 and 246.—Mr. Bampfield, also, is partially an advocate for the windlass—an instrument, we conceive, which is only suited to the barbarous operations of an ignorant bone-setter.

The Hinckley collars, as they are called, invented by Mr. Chesher, are so much in fashion, that it may not be uninteresting to our readers to see Mr. Shaw's remarks on their effects.

"A gentleman had for many years worn one of the collars invented by Mr. Chesher. By using this machine two very bad effects were produced; the muscles of the back were so weakened as to be rendered incapable of supporting the column, while those on the fore part of the neck were so disproportionately increased in strength, by the constant resistance opposed to them by the strap passing from the suspending rod under the chin, that whenever the strap was loosened, the chin was forcibly drawn towards the chest. As the muscles of the back part of the neck did not offer any counteracting resistance, the windpipe was now pressed down or almost doubled on itself. As soon as this took place, (and it was almost immediate on the attempt to sit up without the collar,) the patient was seized with such a sense of suffocation as to be obliged to throw himself on his back. As he was able to breathe with ease while he lay on his back, his advisers were led farther into error, and believed that it was the weight of the head which pressed down the windpipe. To counteract this pressure, various contrivances had been proposed to support the head. Indeed, the patient himself was so convinced, from what he had heard, that it was the weight of the head which pressed down the windpipe, and so alarmed had he become from the certainty of having a fit of suffocation when the head was left unsupported, that I had much difficulty in persuading him to believe that if the head could be made heavier, the sense of suffocation would be relieved. I at length induced him, although he submitted with great dread of the consequence, to allow me to place about fourteen pounds of shot on the top of his head. He was very much alarmed, but it was highly gratifying to witness his surprise and pleasure in finding, that instead of his head being weighed down, he could support it, and could breathe with ease while in the upright posture. The principle on which I proceeded was this:—The muscles on the back part of the neck had been brought into such a state, that their ordinary stimulus was not sufficient to excite them to the ac-

tion necessary to counteract the efforts of those on the fore part of the neck, which had been evidently increased in strength. The placing a weight on a certain spot on the head formed an additional stimulus to the muscles of the back part of the neck, a fact which the reader may prove by an experiment on himself.

"By proceeding on this principle, by combining a variety of exercises, and by gradually diminishing the weight carried on the head, I had very soon the pleasure of seeing my patient walking and sitting in a state of great comfort, without being obliged to use any artificial support."—p. 100.

We were both amused and interested with the anecdote told to the author by an eminent surgeon.

"He was consulted by a gentleman, who is now one of our first tragedians, as to the best mode of correcting a stoop which he had acquired. My friend told him that neither stays nor straps would do him any essential good, and that the only method of succeeding was to recollect to keep his shoulders braced back by a voluntary effort. But the tragedian replied, that this he could not do, as his mind was otherwise occupied. The surgeon then told him that he could give him no farther assistance. Shortly after this conversation, the actor ordered his tailor to make a coat of the finest kerseymere, so as to fit him very tightly, when his shoulders were thrown back. Whenever his shoulders fell forward, he was reminded by a pinch under the arms, that his coat cost him six guineas, and that it was made of very fragile materials; being thus forced, for the sake of his fine coat, to keep his shoulders back, he soon cured himself of the stoop. My friend was much obliged to him for the hint, and afterwards, when consulted whether young ladies should wear shoulder straps, permitted them, on condition that they were made of fine muslin, or valuable silk, for tearing which there should be a forfeit."—p. 112.

Mr. Shaw objects to the violent athletic exercises now becoming fashionable, that they may not only produce hernia, but are frequently ill-suited to the feeble frames of the young and growing, and force their muscles into premature development.

"We may therefore conclude, that although gymnastic feats are sometimes useful for boys, they may be injurious to girls; indeed it is ridiculous to expect that feats of strength, similar to those performed by the ancient athletæ, should improve the female form. There are, however, many amusing exercises to which there can be no objections, and which are most effectual in improving the figure; but to enter into a description of them would be going beyond my province.

"After having objected to almost every plan of treatment that has been hitherto pursued, it may be expected that I should state what I consider to be the best mode of treating lateral curvatures; but such is the variety, even in these affections of the spine, that it is impossible, in a work of this kind, to do more than point out the general principles on which I should proceed.

"Of the many modes that have been proposed, there are few that I would altogether reject, as each may, at certain stages, be applicable; although probably not one of them, if used singly, would be successful. To succeed in curing distortions, we must combine, and in a judicious manner, nearly all the different modes, or, at least, such as are likely to effect the following objects:—

"First, to act upon the spine so as to alter the false position of the vertebræ, and consequently of the ribs and shoulders.

"Secondly, to keep the vertebræ in their new and improved position.

"The third and most essential object is, to bring the muscles of the back into such a condition, that they will, after a certain time, be capable of retaining the spine in its natural position, without the aid of any artificial support."—p. 164.

Our limits prevent us from making farther extracts from the work, which, notwithstanding the repetitions, contains many valuable remarks.

ART. VII.—*Medical Researches on the Effects of Iodine in Bronchocele, Paralysis, Chorea, Scrofula, Fistula, Lachrymalis, Deafness, Dysphagia, White Swelling, and Distortions of the Spine.* By ALEXANDER MANSON, M.D. Physician to the General Hospital, &c., Nottingham. London, 1825.

Of the different accounts which have been given of the effects of iodine on the human body, we have not met with any so favourable as the work of Dr. Manson. In his hands it appears to have accomplished more than its warmest advocates had anticipated; whilst its administration has not been attended with any of those formidable or even fatal symptoms described by Coindet and Brera, and which have induced the former to proscribe its internal employment. Dr. Manson's experience, too, appears to have been considerable, as he informs us that he has used 180 ounces of iodine between March, 1821, and July, 1825.

Although this volume consists of 450 pages, it contains comparatively little that we can lay before our readers, as the greater part of it is filled with the histories of cases of the most uniform and monotonous description. Such a mode of proceeding has the advantages of enabling the reader to judge for himself of the authenticity of the author's statements, the good faith of which few would have been disposed to question without it; to us, the plan appears injudicious and unnecessary, whilst it has

the effect of needlessly swelling the bulk of the book, and rendering its perusal insufferably tedious.

The preliminary observations on bronchocele are altogether trivial, and of the common place description which goes the round of our systematic works without change or improvement. We shall therefore proceed to extract one or two cases illustrative of the effects of the medicine, the mode of exhibiting it, and the accompanying treatment.

"*Case* 4.—Miss N. æt. 20. May 15, 1821. Born and brought up in Nottingham. Is of a florid complexion, brown hair, rather stout made. Has had a certain degree of bronchocele for seven years; it continues gradually to increase in size, and is hard to the touch. About seven years ago, had a scrofulous ulcer on the left instep, that continued open and discharged for about four years. After the catamenial discharge took place, the ulcer healed, but the foot generally, and particularly the instep, remains much larger and fuller than the other, so that she is obliged to have a shoe made on purpose to fit it, although the ulcer has been healed for three or four years. Has also laboured under a considerable degree of deafness for ten or twelve years, which occasions her to have a vacant look. Is in tolerable health for a person who is almost constantly in the house. Catamenia regular. Bowels only moved twice or thrice in a week.

"℞. Pil. Cambogiæ Comp. ʒi. forma in Pilulas xij. quarum sumant duas omni nocte h. s.

"℞. Tæ. Iodini ʒss. capiat gutt. xv. ter in die ex aquæ cyatho vinario.

"16. The drops last evening made her sick, and she afterwards felt very cold. Bowels costive. Has not taken the pills. Pulse 84, and of moderate strength. Statim capiat Pil. Cambogiæ, C. gr. x. et post alvi solutionem sumat Tæ. Iodini guttas x. ter in die ex aqua.

"19. Tumour softer, and thinks she can move her head more freely. Contr. Pil. aper. et Tæ. Iodini.

"23. Goitre smaller and a great deal softer. Her foot smaller, and not so puffy. Drops agree. B. regular. Contr. Pil. Cambogiæ. Comp. p. r. n. Sumat Tæ Iodini gutt. xv. ter in die.

"26. The bronchocele continues to dîminish in size, and is much softer. The left foot also continues gradually to subside, and she can move her toes much better. Contr. Pilul. Cambogiæ. C. p. r. n. Sumat Tæ Iodini gutt. xx. ter in die ex aqua.

"31. The foot measures one inch less at the instep than it did previous to her taking the iodine. The skin is loose and in wrinkles, from the speedy reduction in size, and the parts are much softer. The bronchocele is also much smaller and softer; but, as the measure has been lost, I cannot ascertain the exact diminution. Contr. remed.

"June 5. Continues to improve. Contr. remed.

"7. Bronchocele has diminished three-quarters of an inch since the 31st of May. Foot no smaller since that time. Contr. remed.

"18. Her neck, including the tumour, measures one inch less than on the 31st of May, and the instep also measures a quarter of an inch less since that time. Contr. Tæ. Iodini et Pilul. Cambogiæ. Comp.

"July 7. I have seen the patient occasionally since the last report, without making any notes or alteration in the treatment. The thyroid gland is now very little larger than natural, and her foot is so much reduced that she can wear shoes that are fellows, which she has not been able to do for the last seven years.

"14. There is merely a perceptible fulness of the throat, but it is quite soft, and gives no inconvenience whatever. The feet are now nearly of a size, and she wears shoes of the same dimensions without inconvenience. A most important feature in this case has almost passed without notice—the patient's hearing has been restored in nearly a perfect degree.—Discharged cured."

"*Case* 13.—Miss Mary P—, æt. 16. March 13, 1822. Was born and brought up in Nottingham. Labours under bronchocele of considerable size. It is rather firmer to the touch than usual, and has been gradually enlarging for the last two years. Has no pain in the tumour, but it occasions wheezing, and a sensation of choking when she walks fast. Has never menstruated. Bowels generally costive. Much troubled with headache. Her mother was born in Leicestershire, and is free from bronchocele in any degree, as is also her father, but he is subject to shortness of breath and copious expectoration of mucus, particularly in cold moist weather.

"℞. Pilæ. Alöes Comp. ʒij. forma in pilulas xxiv. quarum capiat ij. omni nocte h. s.

"℞. Tinct. Iodini ℥ss. sumat ægra guttas xv. ter in die ex aquæ cyatho vinario.

"March 20. Has been almost free from headache for three or four days. Pills open the bowels two or three times daily. Neck, including the tumour, measures about a quarter of an inch less. The wheezing is much diminished. Pulse 96. Capiat Tæ. Iodini gutt. xx. ter in die. Contr. Pilul. aper.

"April 11. Tumour softer, but not smaller since last report. Contr. Pilul. aper. Sumat Tæ. Iodini gutt. xxv. ter in die.

"18. Neck and tumour reduced a quarter of an inch by measure; two motions daily by the pills. Capiat Tæ. Iodini gutt. xxx. ter in die. Contr. Pilul. aper.

"May 1. Nearly as at last report. Contr. remed.

"15. Tumour softer, but very little diminished in size. Has not yet menstruated. Capt. Tæ. Iodini gutt. xxv. ter in die. Contr. Pil. aper.

"July 1. Tumour half an inch less by measure. Has had some degree of epistaxis for several days past, but none to-day. Has not yet menstruated. B. open. Continuentur remedia. Utatur pediluvio omni nocte h. s.

"24. Has not taken the drops regularly of late. Tumour smaller, and much softer. Contr. remed.

"Sept. 4. The bronchocele is now scarcely perceptible, and gives no inconvenience. The drops having made her sick, she has not taken them for the last month. Cured.

Remarks.—This patient was cured of the bronchocele without any effect being produced on the uterine system, over which Dr. Coindet thinks the iodine has a specific influence. The above case, and many others which I have treated, have not given me any reason to suppose that iodine does possess any specific powers as an emmenagogue, further than as a stimulant and tonic to the whole body, in which the uterine system must of course participate. This patient began to menstruate about six weeks after she was cured of the bronchocele. The tonic effects of this medicine, as well as of others, depend upon their judicious exhibition: in a case that came under my care, which will be noticed in its proper place, the tincture of iodine occasioned so much sickness and disorder of the stomach, that the menstrual discharge was suppressed altogether, which never had happened to the patient before, except during pregnancy and lactation."

"*Case* 15.—Elizabeth Norman, æt. 42 years, married, and has four children. Out-patient of the hospital, Feb. 10, 1824. Has resided all her life at Wilford, situated on the banks of the Trent, two miles from Nottingham. Says that she has laboured under thick neck from a child. The tumour and neck measures 19 inches in circumference. The bronchocele is firm to the touch, and consists of many lobes. There is one portion that feels hard like bone, and I believe is bone. (This is the patient who was under my care about ten years ago, and is noticed at page 10, as having a bony mass embedded in the bronchocele. She was discharged without material relief, but having lately heard of my success in curing bronchocele, she has again applied to try if any relief can be afforded her.) Cannot walk fast from shortness of breath, owing to the pressure of the tumour. Suckles a child four months old. Her sister and a maternal aunt, labour under goitre.

"Capiat Liq. Iodini gutt.x. ter in die ex aqua et Magnes. Sulph. ℥ss. mane p. r. n. Rain water only to be taken internally.

"Feb. 20. Says that she has wheezed less this morning in coming to the hospital. Thinks she can move her head more forward than when admitted. B. open by the salts. Sumat Liq. Iodini gutt. xij. ter in die.

"March 12. Neck and tumour measure rather less than 18 inches; and the different lobes of which the goitre is composed are more distinct, and have freer motion on each other. The hardness of the lobes is also sensibly diminished. The bony tumour is in the same state. Much less wheezing, and shortness of breath. Capiat Liq. Iodini gutt. xvi. ter in die per septimanam et postea sumat gutt. xviij. Liq. Iodini ter in die. Fricetur tumor Linimento Iodini omni nocte.

"April 9. The neck and goitre measure nearly two inches less. The right side is subsiding faster than the left, and the whole tumour is considerably softer than it was at the last report. From the great diminution in size that has already taken place in this case, there is every

reason to believe, that this very voluminous goitre will be dissipated as completely as ever occurs in cases of such long standing. The bony tumour, as was to be expected, remains in the same state. If she takes more than fifteen or sixteen drops three times a day, her head aches, and she becomes very sleepy.

"Capt. Liq. Iodini gutt. xv. ter in die. Contr. Linim. Iodini. Sumat Magnes. Sulph. p. r. n.

"Recovering under treatment."

The general abstract of the cases of bronchocele treated by the author with iodine, will serve to give an accurate idea of the extent to which the medicine has proved serviceable in his hands.

Total number of cases 116, viz.—

MALES.

Cured	10	
Much relieved	1	
Discharged for non-attendance	1	
Improving under treatment	3	15

FEMALES.

Cured	66	
Much relieved	9	
Without relief	2	
Discharged for non-attendance	10	
Improving under treatment	14	101—Total 116

In a disease so hopeless in its character and so generally fatal in its results as palsy, we naturally grasp at every thing which affords the most distant chance of benefit. The cases related by Dr. Manson appear to justify us in looking with some degree of confidence to iodine in such circumstances, though the theory of its operation is too obscure to tempt us to waste much time in speculation. In fact, the general effects of the medicine in bronchocele, in which its efficacy is most fully established, are not sufficiently understood to allow us to apply analogical reasoning in explanation of its utility in cases of any other description. Let the fact be well ascertained, and we shall either not long want for an explanation, or we shall be very well able to do without it.

The forms of paralysis in which Dr. Manson conceives iodine indicated, and most calculated to afford relief, are those arising from tumours or fluids pressing on the brain, or spinal cord, or from morbid thickening of the investing membrane of the cord itself; and he supposes that it may prove a useful remedy, not only by stimulating the nervous system, and removing morbid tumefaction and effusion, but also by correcting the strumous state of the constitution, that often gives rise to the disease.

If we were inclined to be critical, we might remark that the number of cases of palsy, originating from such causes, is but of

very limited extent; and what is practically of more consequence, that there are no very certain means of distinguishing them when they do occur. Dr. Manson, however, by no means attempts to represent iodine as infallible, or even very certain in its operation; he contents himself with saying, "that although he has been able to cure only a proportion of the cases of palsy that have come under his care since April, 1821, when he first began to employ iodine in it, he is nevertheless quite certain that he has been much more successful in his practice since that time, than he was previously, with the use of all the ordinary means.

We cannot better illustrate this opinion than by quoting one or two of the shorter cases, regretting that want of room should prevent our communicating some other very interesting ones.

"*Case* 1.—John Scothern, æt. 56, a labourer, is a remarkably strong made man, five feet ten inches high, formerly a soldier in the 30th Regt. of Foot. Admitted an out-patient of the General Hospital, the 8th of May, 1821. When in the army, about eighteen years ago, had one or two paralytic strokes, which deprived him of the use of the right half of the body, and he was afterwards discharged from the Royal Hospital, at Kilmainham, as unserviceable. He informs me, that he long remained in a helpless state, but after the lapse of several years, he recovered so much power in the paralytic side, as to do a little work as a labourer, ever since. He first applied to me as a pauper patient the 18th of April, 1821, and I prescribed for him; but not being able to purchase the tincture of iodine, he got recommended as an out-patient of the General Hospital. He complains of great weakness in the whole of the right side of the body, and particularly in the right arm and hand, and the right knee. The right hand shakes very much. The sense of feeling is also very imperfect in the right side. He is much troubled with pain in the occiput, and down the back. Swallows and articulates with difficulty; and says that his memory is very bad, and also his hearing. Bowels generally costive, and makes urine with difficulty.—Pulse 84.

"Capiat Pil. Cambogiæ Comp. gr. x. vel xv. hora somni si tarda est alvus.

"Sumat Tinct. Iodini gutt. xx. ter in die ex aqua.

"May 18. Has less pain in the back part of the head; walks better, and says his hand does not shake half so much. Pulse 72, and of moderate strength. Bowels are kept open by two pills every night. Has taken no tincture of iodine for four days, the quantity he was supplied with having been all used.

"Contr. remed.

"25. Says he has more feeling in the paralytic parts, and less pain in the head, and all down the back. Makes water with less difficulty. Bowels generally open by two pills at bed-time, but is sometimes also obliged to take two in the morning. Pulse 72, and soft.

"Capiat Tæ. Iodini gutt. xxx. ter in die. Sumat Pilulas, p. r. n.

"June 1. Pain has quite left the head and back. Has more feeling in the paralytic side, and the right hand and arm shake much less; he improves in walking, and he says that his general health is much better.

"Contr. Pilulæ. Capiat Tæ. Iodini gutt. xxx. ter in die.

"8. The case continues to proceed favourably. Pulse 64, and moderately full, but soft.

"Contr. remed.

"22. Continues to recover his health, and his hearing is very much improved. Pulse 62, and as at last report.

"August 3. Feels much better. Hand shakes less. Memory better, and he articulates with facility. Is subject to the night-mare when he lies on his back. His urine sometimes runs from him when asleep, but not so often as before he began to take the iodine.

"Contr. remed.

"24. He continues gradually to recover. He complains of pain at the upper part of the loins, and lower part of the back.

"Contr. remed. Applr. Emplast. Thuris Comp. parti dolenti.

"September 14. Says that his right arm feels nearly as strong as the left, but still has a little shake in the right hand and arm. Walks very well. Articulates distinctly, and with facility; and hears nearly as well as ever. Plaster relieved the pain in the loins.

"Contr. remed.

"November 2. The medicines have been continued up to the present time.' Except a little shake in the right hand and arm, he has as perfect use of the extremities of the right side of the body as he has of the left. His hearing and memory are both restored, and he can speak as well as ever.

"Discharged cured."

"*Case* 3.—Jane Varney, æt. 40, lace runner. Admitted an in-patient of the General Hospital, the 5th of February, 1822. The patient informs me, that about five months ago she had an apoplectic attack, which lasted for two days, during which time she was quite insensible, and lay motionless.

"When she recovered her senses she found she had lost the use of the right half of the body, and could not speak. Was first under the care of a surgeon of this town, for a month, and has since been under one of my colleagues of this hospital, two months as an in, and two months as an out-patient; says she has been worse since she has been an out-patient. Has been once bled from the arm, three times leeched, and as often blistered on the right side of the neck and shoulder. Has more use of the arm than the leg, but can walk tolerably. The sense of feeling is not so good in the right as in the left side of the body. Bowels generally costive. Complains of pains in both the right extremities. Sleeps ill. Pulse 93, and small. Tongue a little furred. A blister was ordered to be applied to the fore and right side of the neck at bed-time, and she was directed to take one drop of croton oil, in the form of a pill, every morning, if necessary. The pill not being

sufficient, she took a dose of purging mixture the following morning, and was rather freely moved by it, and felt low afterwards.

"February 9. The purging mixture was ordered to be continued, and she was directed to take twenty drops of the tincture of iodine three times a day in a glass of water.

"16. The third day after taking the iodine she began to improve, and in course of seven days could both walk and use her arm better. Has taken thirty drops of the tincture of iodine three times a day, for the last four days. Pulse 84, and soft. Skin cool.

"21. Continues to improve.

"Capiat Tæ. Iodini gutt. xxii. ter in die. Repetr. Mist. Purg. p. r. n.

"23. She goes on improving.

"Contr. remed.

"26. Yesterday began to complain of a considerable degree of pain in the right upper and lower extremities, and, consequently, cannot move them so well. Pulse small, and soft. Bowels open.

"Omittr. Tæ. Iodini. Contr. Mist. Purgans, p. r. n.

℞. Pulv. Cinchonæ, ℥ss. Pulv. Cinnamoni, ℥ss. Misce, et divide in Pulv. xii. Capiat i. ter in die ex aqua.

"28. Feels better. Pain easier, and can move the arm better. Pulse 84, small and soft. Bowels open.

"Contr. remed.

"March 2. Arm better. Thigh still painful, and cannot move it so well as she did some days back. Pulse 84, small and soft.

"Contr. remed.

"11. Continues to recover, but is a little low from the purging mixture having been taken in too large a dose.

"Contr. remed.

"18. Is not so well as she has been. Arm weak, and has less feeling in it. Has pain in the right lower extremity, and does not improve in walking. Bowels moved three times daily, by the physic.

"Omittr. Pulvis Cinchonæ. Contr. Mist. Purg. p. r. n. Sumat Tæ. Iodini gutt. xxx. ter in die ex aqua.

"21. Feels better since she has taken the iodine. Complains of pain and weakness in the right knee, which is free from swelling or redness. Bowels open. Tongue clean.

"Sumat Tæ. Iodini gutt. xxxv. ter in die. Fricetur genu dextrum Linimento Ammon. fort. m. et h. s.

"25. Continues to improve in every respect, and can move the paralytic limbs better than she has hitherto done.

"Contr. remed.

"30. Has been in bed four days, owing to a severe attack of cynanche tonsillaris, for which the throat has been blistered, and she has used the Infus. Rosæ acidulated, as a gargle.

"April 8. The attack in the throat has been so severe, that it has been necessary to leech and blister it again, and to give her purging enemas, as she could not swallow, but with great pain. The iodine has

been omitted since the 1st of April. Is very weak and low; the swelling of the throat has greatly subsided, and she can now swallow a little food and medicine.

"Sumat Infus. Gentianæ Comp. ℥ss. ter in die. Repetr. Mist. Purgans, p. r. n.

"17. Patient recovers strength.

"Contr. remed.

"20. Continues to improve in strength.

"Contr. remed.

"29. She continues to recover.

"Contr. remed. Sumat Tæ. Iodini gutt. xv. ter in die.

"May 7. Has so far recovered that she can use her needle with the right hand, and can walk pretty well.

"Discharged cured."

These are instances of hemiplegia; but numerous others are also related by the author, of paraplegia, of local palsy, and palsy from the action of lead.

It would be quite out of our power to follow our author through the remaining part of his Treatise, in which he has illustrated the effects of iodine in the diseases named in the title-page, by the relation of cases. In perusing them, it has forcibly struck us, that the author might with equal advantage have very much curtailed them, or still better have confined himself to publishing them in the tabular form, with such remarks as might have been necessary. Our readers may judge for themselves, when we assure them, that had this plan been adopted, a volume, one-sixth of the bulk of the present, would have been amply sufficient.

We have added the formulæ employed by Dr. Manson, which will enable those, who are so disposed, to make trial of the effects of iodine in the manner he recommends; the cases we have quoted will serve to shew the usual doses which he employed.

FORMULÆ.

TINCTURA IODINI.

℞. Iodini..... ℥i.
Spiritus Rectificati..... ℥iiss.
Solve, terendo in vase vitrio.

LIQUOR IODINI.

℞. Potassæ Hydriodatis..... gr. xxxvi.
Iodini..... gr. x.
Aquæ Destillatæ..... ℥x.
Solve, terendo in vase vitrio.

SOLUTIO IODINI.

℞. Potassæ Hydriodatis..... gr. xiv.
Aquæ Destillatæ..... ℥i.
Solve, terendo in vase vitrio.

LINIMENTUM IODINI.

℞. Linimenti Saponis Comp..... ℥i.
Tincturæ Iodini..... ℥i.
Misce.

UNGUENTUM IODINI.

℞. Potassæ Hydriodatis..... ℥ss.
Adipis Præparatæ..... ℥i.
Misce.

The above preparations of iodine have been employed by the names prefixed to them respectively, in my hospital and private practice, for the sake of brevity, and to prevent mistakes. I again beg to observe, that the tincture of iodine employed in the above Researches, is exactly of half the strength of that recommended by Dr. Coindet. Should the London College of Physicians think proper to admit iodine into their Materia Medica, I beg leave to observe, that owing to the difficulty of obtaining rectified spirit of the strength employed by the College, I am of opinion, that it would be attended with less inconvenience to practitioners, and would ensure a greater uniformity in the strength of the tincture, if it were made with proof-spirit, in the proportion of one drachm of the iodine to five ounces of the spirit. A tincture so formed would be of one-fourth the strength of that employed by Dr. Coindet, and of half the strength of that employed by myself; and, in my opinion, would be better adapted for general use than the stronger tinctures that have hitherto been exhibited; and would be more likely to agree with the greater number of patients than if it were stronger, and less liable to be given in an over dose, which I fear has too often been the case in administering this powerful medicine."

We would just remark, that his suggestion of the admission of this article into the London Pharmacopœia would, if carried into effect, be very useful, as it would ensure the uniformity always so desirable in the preparation of a medicine of activity.

Richter on Bronchotomy.

There are two classes of writers, between which the attention of practical men may be profitably divided.

The first consists of such as have diligently observed and faithfully reported the facts they have met with. Good sense, industry, and fidelity, are the only qualifications required in such writers, and as long as the profession is cultivated with success such will abound; since, on the one hand, the materials for the improvement of medical science can be found only in the accumulation of facts confirmed by multiplied and varied observa-

tion; and since, on the other, every improvement *thus* made, begets (as *real* improvement always does) an increase of esteem for observation and experiment, and an increase of talent and industry in their prosecution.

The second class of writers to which we allude must be always more limited in number, though of a higher character. It includes only men endowed with pre-eminent talents, who have enjoyed the best advantages of education, who have had superior opportunities of practice, and who have reaped the fruit of these during a lengthened experience. Such men are the lights of the profession, serving to guide us through the intricacies which false instruction, and the natural obscurity of the subjects of medical research have combined to multiply around us.

It is the office of men qualified as we have described, to arrange the facts which minor contributors have furnished; to compare them with the results of their own more enlarged and discriminate observation; and thus to establish their import and relative value, winnowing false from true, with that tact and discrimination which is the result neither of talent nor experience singly, but of both combined. It is for such masters in the art to view with a comprehensive mind the lines of evidence, as they run apparently counter to each other, and to deduce from them those fundamental practical truths, which accord at once with just physiological reasoning and the results of multiplied experiment.

As men who answer the character we have endeavoured to describe, we number, in our own country, Abernethy, Cooper, Hey; and Richter, in Germany, certainly ranks in the same class; and he has given us (as it is highly desirable every such man should) a systematic view of the rules which guided him to success and usefulness throughout a long and extensive practice. His Principles of Surgery, perhaps, on the whole, the best and most complete systematic work extant, on the subject in any language, has been thought worth translating into French —though it must be allowed that language is by no means deficient in original surgical literature. But whether from the prejudice, the narrow and illiberal prejudice which certainly did, (we will not say does yet) prevail against foreign surgeons, or from some other causes, few indeed of their writings, especially few of the Germans, have appeared in English; and Richter still remains inaccessible to the generality of the profession. It is not the least merit of foreign medical literature, that it abounds in works methodically and systematically arranged— an excellence which writers in this country are too much disposed to undervalue.

It is true that attempts at systematic arrangement have often given occasion to writers, of little sense, for the display of useless distinction and mock acuteness; and the most ridiculous specimens of this kind of pedantry are not uncommon:—but this is the abuse of methodical order; its advantages when used judiciously are obvious and important: it ensures *completeness and facility in reference*, both most necessary qualifications of works intended either for elementary instruction or consultation on emergencies.

We have read books and heard courses of lectures, which, though excellent, in general were partial, and inadequate to the fulfilment of their purpose, merely because—for want of method—they passed by *some things*, which, though comparatively small, are yet absolutely necessary to be learned; or, because for the same want of arrangement, what they did teach could not be found with readiness on the emergency which required its use. We submit it to the consideration of authors and lecturers, whether a greater attention to arrangement than is common with us in England, would not greatly enhance the value and utility of their labours.

The plan of Richter's work, which has rendered it so complete and so well adapted for reference, is a recommendation of its merit which ought not to be overlooked; and the execution of the whole is such as to vindicate his claim to the honourable epithet of 'the judicious,' so generally bestowed upon him. We offer these reasons for presenting our readers with an abstract of the most interesting parts of his work, and a comparison of his surgical opinions with those of the most eminent surgeons of our own country.

We begin with the diseases of the head and neck; and of the surgical subjects which fall under this head, we select that which is inferior to none perhaps in importance, viz. *Bronchotomy*. The chapter which has this title in Richter's work includes not only the operation itself, but the general history and treatment of the cases which require it. The operation of bronchotomy is but rarely performed, although the cases which require it are so frequently occurring; whence does this arise? generally from the mere ignorance or unpreparedness of the surgeon, who cannot perform it; or if the case be under the care of a physician, to his folly, who will not have it performed; for, to the reproach of multitudes of physicians, or rather, perhaps, to the reproach of the education they receive, be it said that they are perpetually undervaluing or traducing the resources of surgery, because they know nothing of them.

The rare performance of this operation cannot be justly as-

cribed to its difficulty or danger, for it will be presently shewn that in the hands of a moderately instructed surgeon, it is both easy and safe in general; and were it indeed considerably dangerous, this would not be a reason for declining it in the majority of cases in which it is recommended, since, in these, death without it is little less than certain. The operation is to the instructed surgeon easy—it is safe—it is life-giving; why then is it not done so often as it should be?—The explanation is, that this operation, like that for hernia, the securing large arteries, and a few others, requires *prompt* performance, affords little time for consideration or consultation, and none for the renewal of anatomical knowledge. The surgeon is called on, to act, generally by himself and for himself, and unless he has that decision of character and confidence, which, if he is not *entirely* ignorant, and therefore rash, he cannot obtain but by being *entirely* master of the business he is called to. Unless he has *confidence, founded on knowledge*, he will neither dare to attempt nor be able to perform his duty. We have known surgeons in the country defer the operation for hernia until it was useless; and then, if they were not allowed altogether to omit it, the event of a bungling endeavour to perform it could be excused on the ground of the patient's state at the time of operation.

If they were to operate at all, they were careful first to let the patient sink into that state which should save them the shame of *appearing* to kill him, however really and effectually they might do so; and all this not from cruelty, not from inhumanity, but because they were reluctant to engage in an undertaking for which they had not previously prepared themselves. Thus it is often with the operation of bronchotomy; and it claims the attention of the surgeon, not only on the ground of its general importance, but especially on this ground, that the life of a fellow-creature may depend on his readiness to perform the operation at a time when he least expects to be called to it, and when he cannot add any thing to the qualifications with which he may have prepared himself in the course of his general education. The objects in view in the operation are:

1st. The formation of an artificial passage for air, when the natural passages through the mouth and nose, or larynx, are obstructed; and

2d. The removal of foreign bodies from the air passages. Richter's experience had taught him that, under every variety of circumstance, the operation was calculated to fulfil these indications; and to its facility and safety he bears most decided testimony. The operation is employed with the view of affording an artificial passage for air chiefly in the following cases;—

1st. In *Cynanche Laryngea* (or, as Richter has it, Angina Inflammatoir á Laryngea), and more rarely in *Cynanche Tonsillaris* the first of these diseases has attracted much attention in this country, within the last few years*, and the efficacy which Richter ascribes to the operation in this case is confirmed by the experience of English surgeons. It is an important remark of Richter's, that in this disease the operation must not be employed merely as a last resource, "because," he observes, "that every inflammatory affection (whatever be its original seat), which is accompanied by long continued difficulty of breathing, is very easily succeeded by inflammation of the lungs, and this often proves fatal, though the symptoms of the original disease may have been relieved."

This tendency to inflammation of the lungs in such cases, is not, perhaps, well understood; we can scarcely attribute it to the mere laborious exercise of their functions, caused by the straitening of the glottis, for many asthmatic patients endure long the most distressing dyspnœa without any inflammatory affection of the lungs; and it is only when dyspnœa depends on *inflammatory* disease that it produces pneumonia. This difference between the consequences of difficult respiration in spasmodic and inflammatory diseases, might be attributed to the *disposing* influence of the febrile state accompanying the latter, but we are not aware that this view admits of proof.

We may often illustrate, and in some degree establish, the import of facts which we cannot fully explain, by comparing and classing them with others of similar character, and by referring to that more general fact on which they seem all to depend.

And if we set aside that explanation to which we have alluded, as attributing inflammation of the lungs following that of the larynx, to laborious respiration under the disposing influence of febrile excitement, then the case will remain quite analogous with that of acute hydrocephalus succeeding inflammation in the abdomen, or that of cynanche tonsillaris, alternating with pneumonia. Of both these cases we have seen instances; and facts of a similar character are numerous. The whole, we apprehend, may be referred to the general fact which the observations of Dr. Wilson Philip seem to have established, viz., that sympathetic irritation, whether connected with similarity of function between the parts concerned or not, is a frequent cause of inflammation.

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* See papers by Dr. Baillie and Dr. Farre, in 3d vol. of Med. Chir. Trans.—by Dr. Roberts, and Sir G. Blane, and Mr. Lawrence on affections of the Larynx, in 6th vol. of the same; and for the diagnosis, see particularly the appendix to Dr. Farre's paper.

One of the most remarkable instances of this kind, to which he alludes, is inflammation following the sympathetic pain connected with hepatitis. And we should be disposed to regard the connexion between inflammations of the lungs and that of the larynx, when the one succeeds the other, as precisely of the same nature; without however denying the probability, that the disturbed respiration and the febrile excitement, may together have some influence.

We should not have allowed ourselves this digression from the subject immediately under consideration, were it not for the purpose of adverting to an important pathological truth, and of giving an instance in confirmation of it. The consideration that mere sympathetic irritation may, if long continued and violent, induce inflammation, deserves to be borne in mind by the practitioner, both in his diagnosis and treatment.

In the treatment then of cynanche laryngea, it is necessary to remember the fact, (explain it as we may) that this disease may be succeeded at a very early period by inflammation of the lungs. To this argument for the early performance of bronchotomy, may be added, that we have less reason to expect success from the general treatment of inflammation in this case than in most others. Mr. Lawrence mentions as the result of his observations, "that local and general bleeding, blisters, and the various internal means are usually inefficacious."—See the excellent paper already referred to Vol. V. of Med. Chir. Trans., p. 248. That the operation, when employed early, saves the patient many hours of the severest suffering, while, as Richter remarks, the local effusion of blood accompanying it is best calculated for resolving the inflammation itself. Richter accordingly asserts, "that he has seen the bleeding during the operation afford immediate relief, and that in one hour after, the patient has already been enabled to breathe by the mouth."

The narrowing or complete closure of the glottis, to which the symptoms of impending suffocation are immediately owing, Richter supposes to depend, not so much in general on its thickening or swelling, as on its spasmodic constriction, produced, as he says, by the irritation which accompanies the inflammatory state.

This connexion, we may observe, of inflammation and spasm, is remarkable in most cases of inflammation, affecting organs, whose structure and constitution, like those of the larynx, admit the combination; it is particularly the case with organs in which secreting membranes, highly vascular and sensible, are combined with a muscular structure; thus we have frequent instances of inflammation of the intestines, accompanied by spasmodic colic, and of inflammation of the bladder, accompanied by spasm of its

neck, and consequent retention of urine. We may thus understand why opium is so frequently useful in inflammatory diseases. We are too much in the habit of considering the instances in which it is so, as mere exceptions to the general rule, which we need not seek to explain. With regard, however, to cynanche laryngea, Sir G. Blane, speaking of two favourable cases, says, "opiates were abstained from,"—and "that the disease being inflammatory, there is every reason for avoiding them till the complaint shall have been fully subdued by the antiphlogistic treatment."—Vol. VI. Med. Chir. Researches, p. 149.

With this view of the proximate cause of the disease, Richter sets aside the objection made by Sharp to the utility of the operation: the objection rested on his observation, that the glottis was free and open after death, but the constriction being spasmodic it is evident that this was no more than might be expected; and it is equally plain that it cannot affect the utility of the operation in any degree.

In connexion with this view of the immediate cause of death in cases of cynanche laryngea, we may mention a conjecture relative to the nature and treatment of croup, which, if well founded, may be of some practical importance. Richter says nothing of the utility of bronchotomy in the latter disease, probably he did not think it necessary to mention it separately or distinguished from cynanche laryngea, considering the arguments stated in favour of the operation in one as applicable in every respect to the other.

It must be allowed, we think, that foreign bodies in the trachea usually kill by exciting spasmodic constriction of the glottis; perhaps we may go yet further, and conclude, with Mr. C. Bell *, that they always kill in this way; those cases indeed excepted, in which death ensues only at a period long subsequent to the accident, and is owing to inflammation and its consequences.

The two following considerations seem almost conclusive in favour of this opinion. 1st, No foreign body, nearly large enough totally to obstruct the trachea, can pass through the glottis. 2d, The chief symptoms of a foreign body in the trachea occur in paroxysms, and it is during a fit of convulsive coughing and laborious breathing, that the patient usually dies.

It is true that this latter fact may be explained, when the foreign body is loose and moveable, from its being at intervals forced upwards into the glottis, which it not only thus increasingly irritates, but may be large enough nearly to fill; but are not the symptoms such also, when the substance sticks in the lower part of the trachea or in the bronchiæ? and if so, must we

* Operative Surgery, Vol. 2. p. 13.

not conclude that foreign bodies in the air passages prove fatal, rather as causes of irritation than of obstruction; rather by exciting the muscles to contract than by interrupting the ingress and regress of the air? As to the propriety of bronchotomy in croup, the opinion of Mr. Chevalier (who seems to have paid considerable attention to the subject,) exactly accords with our own. He says, "I doubt whether death is often to be ascribed to such an accumulation of lymph as absolutely precludes the transmission of air."

If we consult the dissections recorded by authors, especially those by Cheyne and Jarine, we find that the following appearances have been observed. An effusion of lymph lining the larynx and upper part of the trachea, sometimes extending as far as its division, and rarely into the more minute bronchial tubes; the consistence of this lining is various, sometimes it has not sufficient tenacity to admit of its being separated by the forceps or finger from the membrane to which it adheres; sometimes it is so firm that it may be drawn out entire from the trachea, and when it is extended into the bronchial tubes, it exhibits and long retains an arborescent form. Besides this effusion of lymph in the inner surface of the lining membrane, there is often considerable swelling around it, from the effusion of lymph on its external surface.

From the combination of these changes of structure, a considerable lessening of the diameter of the trachea must result; yet it does not appear that this is ever sufficient entirely to obstruct the passage, or even to reduce it to such a degree of narrowness as seems to have occurred in chronic cases, some time previous to death. We may remark, that the false membrane being sometimes so loose and moveable as to admit of its expectoration, a part of it may be carried upwards and downwards with every expiration and inspiration, the rest remaining fixed; it may thus act as a valve during expiration, and cause at intervals its entire and sudden obstruction. In general, however, after death no part of the membrane is found so disposed as to be capable of acting as a valve, the whole of it adhering equally and firmly to the mucous membrane.

The bronchiæ and air cells, frequently also the trachea itself, are found loaded with mucus; and this is often in such quantity that some authors think it the usual cause of death; and certainly, if such an opinion were well-founded, nothing could be expected from the performance of bronchotomy; but we have good reason to believe that this accumulation of mucus is merely a consequence of the original affection, which might be defined, inflammation of the lining membrane of the trachea, of the kind

called adhesive, *i. e.* terminating in the effusion of coagulable lymph. This termination is a distinguishing feature of the disease, the effusion of mucus is not an immediate consequence of the inflammation; makes no part of the disease in question, but is merely a sequela of it, common to this and numerous other disorders of the respiratory system. We are warranted then in concluding from the dissections on record, that in general the effusion of lymph, the characteristic and exclusive produce of the inflammation in this disease, does but partially obstruct the air passages, although the accumulation of mucus, which ultimately occurs, perhaps in every case, may do so more completely.

The *symptoms* of croup are those which arise from a spasmodic affection of the glottis, combined with a certain degree of obstruction in the trachea and bronchiæ; and the characters which distinguish croup from severe catarrh or bronchitis, in young children, are owing entirely to the spasm of the glottis. The alternate remission and aggravation of the dyspnœa can depend on this cause alone, and the peculiar stridulous respiration, is attributable as much to this as to the narrowing of the trachea, if not more so. The occurrence of the chief symptoms of croup in paroxysms is acknowledged by the best observers; but it has received, perhaps, much less attention than it deserves in the explanation of the nature of the disease, and in the direction of its treatment. So prominent a feature is this intermission in many cases of the disease, that in the most classical work on the subject (that of Jarine) a distinct species is treated of, under the name of *Intermittent Croup.*

Taking it as an acknowledged truth, obvious to every observer, that the most urgent symptoms of croup are subject to alternate remission and aggravation, and considering that the effusion of lymph, if regarded merely as the means of lessening the diameter of the trachea, neither in any degree accounts for this peculiarity in the symptoms, nor appears an adequate cause of their urgency, we are justified in concluding that the effusion has an additional and different influence. The best established physiological principles, the impartial history of the disease in question, the history of diseases strikingly analogous, particularly cynanche laryngea, and cases of foreign bodies in the trachea, the effect of remedies, all concur in the indication, that this additional influence of the effused lymph consists in an irritation of the glottis sufficient to produce its spasmodic contraction *.

* Dr. Albers, of Bremen, seems to admit this opinion. He says, " we cannot deny

The symptoms of this affection of the glottis frequently occur, however, so early in the disease, that the mere existence of inflammation, previous to the effusion of lymph *, must be sufficient to afford this degree of irritation. To the connexion between inflammation and spasm, and the frequent examples of it in organs of a certain structure, we have already alluded, when speaking of cynanche laryngea.

According to the view we have taken of the nature of this disease, bronchotomy may give relief in it, although we should be unable to open the trachea below the point to which the false membrane has extended. This opinion may appear at first view absurd—it is, perhaps, novel; but it is still reasonable, unless the above statements, on which it is founded, can be pronounced utterly incorrect. The truth, however, of the proposition has yet to be decided by experience; and we can only now inquire how far the result of cases in which the operation has been tried hitherto, influences the question of its efficacy.

The operation has undoubtedly succeeded in many instances, but the success has been differently explained. In general, it seems that the operator has figured to himself the trachea nearly or entirely closed by coagulable lymph at a certain point, and has attributed his success to his having made an opening *below* that point; but what proof have we that this was really the case? No reason can be adduced why we should attribute success to this cause, and not to the mere fact of an opening having been made below the glottis, considering that as the real point of obstruction; it is as probable, that in these successful cases the false membrane extended below the artificial opening, as that it did not.

Mr. Chevalier, impressed with the conviction that the effusion of lymph was not such as "absolutely to preclude the transmission of air," ascribes the success of the operation in his cases to "its emptying the trachea of mucus;" but there is no proof that it was really owing to this cause, except that mucus was expelled through the artificial opening. May we not still ascribe the success, and with even better reason, to the cause we have mentioned, considering still the contracted glottis as the chief impediment to the transmission of air.

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that the spasm of the glottis, and perhaps also of the bronchiæ may contribute to suffocation, as these passages are not always completely obstructed by coagulable lymph.—V Abhandling über de croup-von Ludwig Jarine Miet euner Vorrede und Aumerkungen hercius gegeben von Dr. J. A. Albers, Leipzig.

* Mr. Lawrence mentions a case in which the patient had well marked symptoms of cynanche laryngea, though after death the membrane appeared quite healthy, and the passage not at all narrowed.

It may be objected to the view we have taken that, according to it the operation ought always to succeed, whilst there are but too many instances of its failure. We only maintain, however, that, contrary to the current opinion, the operation is calculated to give relief; that it *may* succeed even where we cannot make an opening *below* the limit of the false membrane; and we would argue also, that the failure generally ascribed to the impossibility of making the opening in this situation, is obviously and justly ascribable to other causes, chiefly to its being deferred, until, in consequence of long continued laborious breathing, and the imperfect influence of the air on the blood, these changes in the general system are induced, which (as Mr. Lawrence and Richter have so strongly insisted) are causes of death, even when the original obstruction may have been removed.

The accumulation of mucus, though no part of the original disease, yet occurs to such a degree in the latter period of it, that it becomes a principal source of danger, especially as at this period sufficient strength does not remain to admit of its expectoration. To these causes we would attribute the failure of the operation, when properly performed; rather than to the one commonly assigned—and if we are correct, we must conclude that the operation has failed in general, only because it has been employed too late. From what has been stated we would draw the following conclusions :—

1. That the general nature of the disease affords reason to expect the best effects from bronchotomy.

2. That these effects may yet be expected, when we cannot open the trachea below the limit of the effused lymph.

3. That where success has been obtained, it is to be ascribed merely to the introduction of air below the glottis, the real seat of the obstruction.

4. That the frequent failure of the operation may, in general, be ascribed to its being performed at so late a period; when the exhaustion of vital power and the accumulation of mucus, which cannot be expelled, are sufficient causes of death, though the original obstruction should be entirely removed.

The above remarks are submitted to the profession with the hope that they *may be* verified; and we would suggest, as subjects of peculiar interest, the observation of the exact circumstances under which the operation succeeds or fails; and this with a view to determine the causes of failure and success, so essential to the right application of the operation, and certainly hitherto not well understood. It will not, we trust, be disputed, that we are fully justified in trying the operation at an *early* period as often as opportunity offers.

In such cases the difficulty of breathing is so urgent, as to require speedy relief. Cynanche tonsillaris is rarely accompanied with sufficient swelling to threaten suffocation, before suppuration has taken place; and when this has occurred the puncture of the abscess will generally afford sufficient relief; if, however, the abscess were neglected, and left to burst spontaneously, the event might be delayed long enough to obstruct considerably, or even entirely hinder respiration.

An abscess in the tonsil can scarcely be opened too early. Should we, even through mistake, puncture the tonsil prematurely it is useful as a scarification, and it will be perfectly safe if done as recommended by Mr. A. Burns*. *i, e.* "by carrying the instrument directly backward, as if to cut off a segment of the tumour. Should the puncture of the abscess be delayed too long, not only does the patient suffer, when the abscess is large, all the distress arising from obstructed respiration, but there is also, as Mr. Burns has pointed out, the greatest danger of the pus rushing with the air into the trachea, as soon as the sudden bursting of the abscess allows of a free and full inspiration. Mr. Burns gives a case in which this actually happened, and induced immediate suffocation. He recommends, therefore, the opening of the tonsillary abscess by a trocar, and warns us that since the abscess sometimes points through the velum, we are not always to expect the usual appearance of the tonsil, and to wait for this before puncturing the abscess.

Wounds of the Larynx, says Richter, are often accompanied with so much swelling that the patient can neither breathe through the glottis nor through the wound itself. If the introduction of a tube into the wound be not practicable, or cannot be borne, the surgeon, he thinks, should not hesitate to open the trachea; and it may be remarked, that the good effects resulting from the topical bleeding in cynanche laryngea may be expected in this case. The next case in which he recommends the operation, is where a polypus of the œsophagus is to be tied.

"It is necessary," he remarks, "for this purpose, that the polypus should be thrown up into the mouth by exciting vomiting, and as the patient cannot breathe while the polypus is in the mouth, the ligature must commonly be thrown around it in great haste, that the patient may be allowed to withdraw the tumour by swallowing.

"In the haste, the ligature is generally so badly applied that the end of the operation is defeated. The operation might be performed with more exactness and success if the trachea were previously opened;

* Surgical Anatomy of the Head and Neck, page 257.

for not only might the ligature be then adjusted more effectually, but the polypus be allowed to remain in the mouth until its separation.

"In the extirpation of chronic tumours of the mouth or fauces, as schirrous tonsils, polypi of the fauces, &c., great difficulties and dangers are usually met with, arising, if the surgeon employs the knife for their removal, from the great flow of blood; if he uses the ligature, from the swelling of the tumour; these evils may be prevented by the previous use of bronchotomy."

Richter must, of course, be understood to refer here to the bleeding and swelling, only as they may affect respiration; it is, perhaps, on this account that the bad consequences of the ligature are chiefly to be apprehended; but the hæmorrhage consequent on the use of the knife may not only suffocate, but is dangerous in itself, as admitting no *certain* means of restraint. It may be remarked here, that the freedom with which Richter recommends bronchotomy as a prophylactic measure, (if we may so speak,) while we are in the habit of hearing it spoken of only as a last resource in desperate cases, proves more strongly than his mere assertion could, the high confidence he has in its ease, safety, and efficacy.

When a *foreign body* sticking fast in the upper part of the *œsophagus*, and exciting symptoms of impending suffocation, cannot be immediately removed, the surgeon, according to Richter, should open the trachea to gain time for the use of farther means. Some authors, as Bichât, recommend the *immediate* use of the operation, when a foreign body in the œsophagus obstructs the trachea by its pressure; but surely the ordinary means for its removal are so simple, so speedily applicable in general, and so frequently effectual, that we may contend, with Mr. Samuel Cooper, that these ought first to be tried.

It has been recommended in such a case to inject one or two grains of tartarized antimony into a vein, and this appears to have been done with success, but the operation we are considering ought certainly to be preferred; as no less speedy in its effect, more certain, and, we may add, even more safe. Bronchotomy may be of use also, says Richter, in cases of *bronchocele*, where the tumour encroaches dangerously on the trachea; not only in averting the danger of immediate suffocation, but also in affording time for the employment of general remedies; we may at least, he remarks, defer the fatal event by the use of the operation. It would seem that Richter entertains no hope beyond this in cases of bronchocele, where the usual treatment has failed, for he considers the extirpation of the tumour too dangerous to be justifiable. We need only observe here, that there are cases on record which fully prove the error of his

maxim. *In suspended animation* from *drowning*, bronchotomy, according to Richter, is useless; he says—

"Detharding maintains that the epiglottis in these cases is found closely shutting the glottis; so that no air can possibly enter the lungs through it, and that therefore an artificial opening for its admission is required," and adds, "Experience contradicts this statement."

If, however, as is probably the case, the glottis in most instances is found open after death, Richter's objection to the operation, founded on this fact, may be refuted exactly as he himself refutes a similar objection made by Sharp, to the operation in cynanche laryngea. The question of the immediate cause of death in drowning, being intimately connected with medical jurisprudence, and of the utmost importance in determining the treatment of such cases, has received much attention. Perhaps the following statement will be now generally admitted:—

A drowning person abstains from every attempt to inspire as long as possible; when he is compelled to do so, water instead of air rushes into the fauces; the glottis closes, its spasm resists the entrance of the water into the trachea; but during the attempt to inspire, alternating with this state of the glottis, a little may escape into the trachea; this excites efforts for its expulsion, and, during the agitation to which it is subjected, mixing with the natural secretions and with the air remaining in the passages, it forms that froth which is usually observed on the examination of bodies lately drowned. The struggle at length ceases; the functions of the brain and heart being suspended in consequence of the circulation of venous blood in the arterial system. The muscles of the glottis then, in some cases, gradually relax, and (as occurs in other instances where death has happened during strong convulsive efforts) in some cases it remains closed.

In cases of death from pertussis, we find the muscles sometimes very strongly contracted, shewing that the patient had died in convulsion; the functions of the brain and nerves having been first irregularly performed, and then suspended; while the irritability and contractile properties of the muscles were scarcely diminished. In other cases of death from the same disease, we find the muscles relaxed after death; and in these instances, probably, the energies of the muscular and nervous system were equally and gradually exhausted, from the imperfect performance of respiration. In both cases death must be attributed to the blood not having been duly changed by exposure to the influence of air; but yet the mode of death in each seems to have been different, and the appearances after

death equally so. We believe that these remarks may be applied to death by drowning, which in some cases may occur in the former; in some, in the latter of the modes above described; in the one, muscular contractility being still perceived at the moment of death—in the other, having been previously exhausted: in the one case the struggle having been but short—in the other, more protracted.

The mode of death will be determined by the constitution of the patient, the state he may happen to be in at the time, and by the variety of circumstances attending the last struggle for life. There is reason, then, to believe that the glottis will be found open, or otherwise, according to the mode in which death has taken place. And the question of the state of the glottis after death does not affect either our view of the proximate cause of death (which is in every case the exclusion of air from the lungs), or the principal indication in the treatment, which is the inflation of the lungs; though it may in some degree affect the manner of fulfilling their indication. We allude here to the proposal of Desault, for the inflation of the lungs by means of the elastic catheter, passed from the nostrils into the larynx; the possibility of a spasmodic contraction of the glottis is certainly an argument against the preference of this method to that of opening the trachea. The advice of Mr. Samuel Cooper should, perhaps, be followed, always to prefer the operation of bronchotomy for the purpose of inflating the lungs, notwithstanding what is said by Mr. A. Burns, who strongly advocates Desault's plan*.

It was long a prevailing opinion that the lungs of drowned persons were always filled with water; an opinion which, if well founded, would establish the inutility of bronchotomy, and indeed of every means of inflating the lungs in such cases. The idea was long supported by the celebrity of the eminent French surgeon, Louis, who was its principal advocate; but it is now generally abandoned. The reader will find it refuted, and the whole subject ably treated in the article Noyés, by Foderé, Dict. des Sciences Medicales. Portal, in his numerous observations, found no water in the lungs; and Morgagni and Haller found a conclusive argument against the opinion, in the number of persons restored without any evacuation of water.

* Page 385 of the work above referred to.

ART. X.—*The Principles of Midwifery; including the Diseases of Women and Children.* By John Burns, C. M. &c. &c. Sixth Edit. London, 1824.

In bringing Mr. Burns before our critical tribunal, it will not be supposed that we mean to enter into any discussion of the general merits of one, whose reputation as a teacher and a writer has been so long and so justly established. Our sole intention is to advert to a few of the peculiarities of the doctrines he inculcates, and to communicate to our readers such improvements as his extended experience has suggested.

In doing so, we shall avail ourselves of our privilege of selection, and turn our attention more particularly to those points on which professional opinion is most unsettled, or in which our author appears to differ from received opinions. This is in some degree the case with certain parts of the chapter on tedious labour, the practice there recommended having formed the subject of a good deal of criticism.

Mr. Burns divides tedious labour into two orders; the first from imperfect uterine action; the second from mechanical impediment; although it is quite possible that these two sets of causes may be combined in various degrees. The imperfections of the uterine action are chiefly of three kinds; viz. "feeble or sluggish and languid action of the uterus; second, partial or spasmodic action of the uterus; and third, restrained action; the energy of the uterus being prevented from being put forth by some other cause."

It is not always easy to indicate the causes of languid action of the uterus; they are sometimes general or constitutional, but more frequently local. This condition of the uterus may often be traced to injudicious interference, particularly in the early stages of labour, or to the premature commencement of the process, impressing a character of imperfections on all the subsequent steps. Besides this, Mr. Burns enumerates as causes, the premature rupture of the membranes followed by oozing of the water; over distention of the uterus; the operation of fear and other passions; general debility, and uterine torpor, combined with a leucophlegmatic habit, or a disposition to obesity.

It is in such cases, that the greatest superiority of that practice is displayed, which deprecates every unnecessary interference and all corrective measures which do not rest upon a clear and rational basis. Instead of forcible dilatations, violent

expulsive efforts, and the use of various stimulants, we daily experience the happiest results from repose, the abstraction of all causes of irritation, a guarded attention to the progress of the case, and a careful investigation of all the circumstances which may be supposed to promote or retard its advancement. In such instances it is important, however, that we should distinguish between the effects of debility, fatigue, or exhaustion, and the delay which may arise from impediments, apparently of a trifling kind.

"It is a fact not sufficiently attended to, that in many cases a very moderate resistance, which we should think the uterus might easily overcome, does retard the expulsive process, and render the pains irregular or inefficient. Thus, I know from experience that the membranes may be so tough as not readily to give way, and in this case the pains become less effective, and the labour is protracted till they be opened. Whenever the resistance is removed, the pains become brisk and forcing. In the same way relaxing the os uteri by blood-letting excites the uterine fibres to brisker action."—p. 415.

It must not be imagined from the preceding quotation, that Mr. Burns is an encourager of the plan of indiscriminately rupturing the membranes. On the contrary, he distinctly states, that however advantageous, under a peculiar set of circumstances, it is, if unnecessarily resorted to, decidedly prejudicial.

Of the more ordinary occurrences in obstetrical practice, we are scarcely aware of any more distressing, at once to the patient and attendant, than those symptoms connected with spasmodic action of the uterus previous to delivery. "The pains are severe, but produce very little effect, and often when they go off, are succeeded by a most distressing uneasiness in the back; indicating, in general, the existence of spasmodic action." Among the causes are imperfect discharge of the waters, and, probably, in some instances, a slight degree of contraction at the upper aperture of the pelvis, or a certain extent of deviation from the due position of the presenting part, indisposing it to accommodate itself to the expulsive efforts.

"A saline glyster is of much benefit in this kind of labour, and it is useful to press up the head, especially during the pains, to favour the evacuation of the water; for whenever this is accomplished, naturally or artificially, the action becomes much stronger. It is also useful to detract blood, if the os uteri be rigid, the parts not disposed to yield, and the pains very severe. It is peculiarly proper when the woman has rigors. When the organs are firm, and the pains lingering, it causes relaxation, and quickens the pains. If, on the other hand, the os uteri be lax and thin, or soft, it is both safe and advantageous to dilate it gently with the finger during a pain. If this be done cauti-

ously, it gives no additional uneasiness, whilst the stimulus seems to direct the action of the uterine fibres more efficiently towards the os uteri, which sometimes thus clears the head of the child very quickly; and the pains which formerly were severe, but, in the language of the patient, unnatural, and doing no good, become effective, and less severe, though more useful."

In the kind of case which Mr. Burns has here described, we can ourselves bear testimony to the safety and utility of the practice he recommends; although it is opposed to the principles of many eminent writers on midwifery. If he had limited its application to such instances, it is probable that there would have been little difference of opinion on the matter. He, however, extends the same mode of treatment to most cases of tedious labour, and it is to this part of his practice that the strongest objections have been raised. In considering the question, it is right to bear in mind that Mr. Burns altogether discountenances violence and interference, if the labour is proceeding naturally. The practice is to be tried by its own merits, and any abuse of it, however flagrant or unfortunate, will not, by the impartial, be viewed as a valid objection. For ourselves, we confess that we are strongly impressed in favour of it, by Mr. Burns' arguments; though he appears to us to carry the principle much too far, when he advises as a general rule

"That, if the labour be going on all the time, but slowly, the dilatation of the os uteri should be effected within ten or twelve hours from the commencement of regular labour."—p. 419.

"Two circumstances are necessary to render it safe; the os uteri must be lax and dilatable, and the dilatation must be gradually and gently effected during the continuance of a natural pain."—"It is done best by pressing on the anterior edge of the os uteri, during a pain, with two fingers, with such moderate force as shall not give additional pain, and shall appear to excite the natural dilatation as much as to produce mechanical opening."

"If the os uteri be somewhat projecting, it is aided by introducing two fingers, and extending them laterally with gentleness, during a pain.

"If the case be proper for it, the dilatation is easily and safely effected: if not, bleeding, or an opiate, if the former be not indicated, will soon bring about a favourable state."

Mr. Burns quotes in favour of the practice, the authority of Dr. Hamilton, who, like himself, makes it a rule to have the first stage of labour finished within a given time. To us, such a rule seems in a great measure unwarranted and unnecessary. That the practice of dilatation, under proper management, is both safe and useful we are quite convinced; but we decidedly

object to the idea of reducing a natural process to the same level with a mechanical operation, and feel satisfied that, as a uniform line of conduct, such treatment must be, if not hazardous, at least superfluous.

Taken altogether, Mr. Burns' precepts in this particular would warrant a much more frequent and considerable interference than is usually recommended, and much more than our own experience would induce us to suppose necessary.

A cause of tedious labour of frequent occurrence consists in rigidity of the soft parts. This generally exists to a certain extent in almost every instance of a first labour, but in some cases is much increased, either by constitutional peculiarities, the advanced age of the patient, or a diseased condition of the parts.

"This rigidity may exist in the os uteri, the external parts, or both; and if, along with this, there be premature rupture of the membranes, the difficulty is always increased."

In such instances, various plans of treatment have been proposed and tried; but blood-letting is undoubtedly the most efficacious. It has appeared to us much more beneficial when the impediment lay in the state of the os uteri, than when the external parts were concerned; although we find that Dr. Dewees, an authority on this point, praises the remedy, more particularly in cases of contraction of the vagina from cicatrices. The extent to which blood-letting may be practised in such cases with advantage or impunity deserves a serious consideration, particularly as some of its advocates, in the warmth of enthusiasm, appear to verge upon imprudence. Dr. Dewees, for instance, of Philadelphia, to whom we are indebted for recalling the attention of the profession to its utility, carries blood-letting to an extent, which in any case would be thought rare, and which, in relation to the state of parturition, is enormous. He bleeds to syncope, taking away from fifteen or twenty, to forty, fifty, or even near seventy ounces of blood. It is right to say that it is chiefly in cases of rigidity from the contraction of cicatrices of the vagina that he proceeds thus boldly. Even in those instances however, such a strength of constitution can rarely occur as to warrant us in acting so decisively. For our own parts, we have often derived material benefit from moderate blood-letting, employed not specifically, but simply with the view of reducing immoderate action, whether general or local. We have never observed any circumstances which either required or permitted bleeding to any thing approaching to the extent advised by Dr. Dewees. To the production of syncope, however desirable as a relaxant, there are strong objections in a process during which so many calls are made upon the system,

and in which it so easily receives and retains morbific impressions. The opinions of Mr. Burns appear to be very similar, though not quite so decidedly expressed.

"In determining on the use of blood-letting, we must attend to the state and habit of the patient. Debilitated women, and those who are exhausted by fatigue, especially among the lower classes in large cities, are injured rather than benefited by this practice. Robust women, of as rigid fibre, in the middle class of society, or who live in the country, bear blood-letting better, and derive more benefit from it. In them it is especially proper; if any degree of fever attend the labour, and in whatever part the rigidity exists, if the patient be not previously reduced, or very delicate, blood should be detracted *pro viribus*. If, however, the state of the patient forbid this, an opiate glyster is the appropriate remedy."—p. 429.

The next chapter of Mr. Burns' work on instrumental labour, contains most valuable instruction, conveyed in clear and precise language. Here, as in the cases already mentioned, we find him an advocate for early interference, particularly as regards forceps cases. This is a subject on which considerable diversity of opinion has always existed, nor is it so easy to decide between the contending parties as might be supposed. As a general principle, we hold it to be established that the object of instrumental interference is to prevent and not to remedy the mischief which is admitted on all sides to be produced by excessive delay. It is perplexing, however, to find that the same principles in different hands lead to materially different modes of practice. We believe that few of the present day will deny that Dr. W. Hunter, with most others of the same school and era, trusted far too implicitly to the powers of nature in this and other parts of obstetric practice. Mr. Burns has selected Dr. Osborn, who published as long back as 1783 and 1792, for the particular object of his animadversion, and with justice as far as concerns the practice he inculcates. According to Dr. Osborn, in a case requiring the use of the forceps, "all the powers of life are exhausted, all capacity for farther exertion is at an end, and the mind as much depressed as the body; they would at length sink together, under the influence of such continued but unavailing struggles, unless rescued from it by means of art."

Of the impropriety of waiting for such a condition as that on which Dr. Osborn rested his indication for interference, there cannot now be two opinions. But in quoting him, Mr. Burns appears to have conjured up a phantom of imagination, which has no connexion with the real state of the case. In the first place, Dr. Osborn's doctrine, we venture to pronounce, in op-

position to Mr. Burns, to have been that of an individual, and we need not remind him, that even on its first promulgation, it met with considerable animadversion, the nature of which was by no means favourable. In the next place, we are not at all inclined to allow that such is the doctrine inculcated or carried into practice at the present day, a point on which we fearlessly appeal to the experience of our readers. When the natural powers are inadequate to delivery, but not until then, generally speaking, and when the circumstances of the case permit interference, no good, but on the contrary, positive harm results from delay. It is absolutely necessary to adopt some criterion of the inadequacy of nature to the effort required, or there would be no limits to rash interference by impatient individuals; and be it remembered that, even if such a happy revolution in the state of the profession should occur, as would secure a pretty uniform competence of instruction among practitioners of midwifery, we should still be as much as ever at a loss to check the over activity of the hasty and inexperienced. The best criterion with which we are acquainted is the lapse of time, though it is by no means absolute, nor always to be depended upon. The length of time admitting or requiring artificial interference is liable to material variations; in one individual, it would be imprudent to allow twenty-four hours to elapse from the actual commencement of labour; whilst in another we might, with prudence, though rarely, wait double that period. Our decision may, in general, be materially assisted by the attendant circumstances, by which we must, if necessary, be guided, to the exclusion of time and every other consideration. It is impossible, or nearly so, to fix absolute rules of conduct in matters subject to so many causes of variation as living processes, labour among the rest; but in every instance of tedious labour a time must arrive, at which, whatever be the actual condition of the patient, we must interfere for the purpose of obviating future bad consequences. If we were required to fix such a period, we should say thirty-six hours, seldom or never forty-eight. Of course we mean that labour shall, up to the time of interference, have been proceeding in such a manner as to afford fair cause to expect natural delivery; if it have not, the motive for delay, the avoidance of unnecessary interference no longer exists.

In coming to any conclusion on this very important practical point, considerable assistance may be derived from a reference to the statistical results of the practice of qualified individuals. The discrepancies of such statements are such, however, that they can only be explained by supposing a material difference

in the extraneous circumstances. For instance, it is reasonable to expect a considerable variety between the results of practice in country districts and in manufacturing towns; between the practice of him who has the exclusive care of his own patients, and of one who is frequently called upon to remedy or conceal the negligence and errors of midwives and ignorant practitioners. It may be interesting to quote the proportion of forceps cases in the practice of various individuals, for which we are chiefly indebted to Dr. Merriman's excellent Synopsis.

At the Hospice de la Maternité, Paris, (Baudelocque and Boivin) in 20,357 cases, the forceps were applied in the proportion of 1 in 212.

At the lying-in Hospital of Vienna (Professor Boer,) among 18,642 cases, the proportion was 1 in 274; one woman in 93 died.

At the lying-in Hospital of Dublin, (Dr. J. Clarke) among 10,387 women, the proportion was 1 in 728, one woman in 96 died.

In the same Hospital, the tables of 78,000 cases, published by Dr. Brera, present us with a mortality of 1 in 92. Instruments were used in the extraordinary proportion of once only in 1770 cases. One child in 18 was still-born. Mr. Burns has correctly pointed out the fallacy of drawing any conclusions from this table against instrumental interference, by a statement of the comparatively enormous mortality among the cases of tedious labour it contains, which, in the general result, is lost in the very small ratio of mortality on the natural cases. Of those in labour for the first time, between thirty and forty hours, one in thirty-four died, and one child in five. For the same period, in those who had already born children, and in whom therefore, there was probably some permanent obstacle to delivery, one in eleven died, and one child in six. If labour continued between forty and fifty hours, one in thirteen died, and two children in seven. From fifty to sixty hours caused the death of one woman in eleven: from sixty to seventy one woman in eight, and nearly half the children.

At the Westminster General Dispensary, (Dr. Bland) of 1897 cases, one in 470 were delivered by a single blade of the forceps, and one in 270 died.

In 2947 cases recorded by Dr. Merriman, the forceps or vectis were used once in 140 cases. The mortality was one in 210.

Smellie calculated that the forceps would be required once in 125 cases, and he was by no means a favourer of delay. Mr. Burns states the modern calculations to be one in from 158 to 188. Professor Nagele of Heidelberg (Quarterly Journal of Foreign Me-

dicine, Vol. II. p. 288.), employed the forceps once in fifty-three cases, which Mr. Burns states to accord with his own experience. Our own opportunities, though limited in comparison with those of some others, are sufficiently extended to authorize us in rating forceps cases at one in 150, and the mortality less than one in 700.

On these various statements, which might be increased to almost any amount, it is to be recollected that the circumstances are in many instances materially different. Thus the practice of public Institutions, and particularly Clinical Hospitals, forms no proper criterion of what occurs in the ordinary walks of life. On examining the highly deserving reports of many such Institutions on the Continent, we have repeatedly been struck with the unusual proportion of instrumental cases of all kinds; a ratio we can only explain by the very probable supposition that such cases are sought for and selected for the purposes of instruction. Such we conceive must have been the case in the Heidelberg Institution, already alluded to. It is there also stated that Dr. Hagen, of Berlin, employed the forceps in ninety-three cases out of 350. In the report of the Clinic of Pavia, by Omboni, (Quart. Jour. of For. Med. Vol. V. p. 324.) of forty-eight cases, twenty were difficult, in two of which the pelvis was contracted, the antero-posterior diameter in one being $3\frac{1}{2}$ inches [French,] in the other $3\frac{3}{4}$ inches; in the latter, the Cæsarean operation was performed, without any sufficient cause, and without success. In the report of the same Institution, by Lovati, for 1822-23, (Anderson's Jour. Vol. II. p. 93.) of 67 cases, 12 were difficult, and five instrumental; in two of these the Cæsarean operation was legitimately applied, but failed in both.

Another circumstance, which renders the data derived from the practice of foreigners, as to the use of the forceps, inapplicable in this country is, that they employ them in many instances in which the perforator would be substituted by us. This is particularly the case with the Germans and French. The professed object is the safety of the child, a desirable one it must be allowed, though rarely accomplished, and always attended with no small degree of hazard to the mother. It has been stated that a conjugate diameter of three inches is the utmost degree of contraction compatible with the safety of the child, and we believe that every candid practitioner will confess that, even in that degree a happy event to both mother and child is rather a thing that may, and sometimes does, occur, than one to be generally looked for, or reckoned upon. Yet we will venture to say, that few foreign accoucheurs would hesitate to apply

the forceps in degrees of contraction greater than this; and be it remembered, too, long forceps, at the upper aperture of the pelvis. Smellie has well described the possible results of such practice; he says—

"A long pair of forceps may take such firm hold, that with great force and strong purchase, the head may be delivered; but such violence is commonly fatal to the woman, by causing such inflammation and perhaps laceration of the parts as is attended with mortification."

Speaking on the same subject, Mr. Burns expresses himself in a very similar manner, and gives a very correct picture of the consequences which may accrue to both mother and child.

"When the head is altogether above the brim, or only a small part, after many pains, has entered, and the conjugate diameter is evidently under three inches, the forceps, even if the blades could be applied, could not, when joined, be brought through, if they do not approach nearer to each other than is compatible with the safety of the child; and therefore the head must be lessened. The blades of the forceps may be made with little curvature, so that, when joined, they shall not be above two inches and a half from each other; and when applied, they may, perhaps, by force, be brought to this proximity. But can the head be expected in general to bear this degree of pressure."—p. 458.

"It is in vain to propose the application of the long forceps, when the head possesses its usual firmness, and is of the ordinary size, if the pelvis do not, with the soft lining, measure three inches; for if this be the case, the forceps, when joined, could not be brought through the pelvis, unless they were so shaped as to permit of squeezing the head to a degree most probably incompatible with life. Can the blades be introduced when the conjugate diameter does measure three inches? They certainly may: but it is one thing to introduce them, and quite another to apply them over corresponding parts of the head, so as to be able to lock them, and obtain a secure fixture. The blade at the pubes may be applied in a proper direction, but the projection of the sacrum may turn the other more easily aside than an experienced man would suppose; and those who have most frequently tried it will best know the difficulty of adjusting the blades."—"The application of the long forceps requires more dexterity and experience than that of the short; and as great danger may arise from the fruitless irritation which is given in unsuccessful attempts, which, besides, end at last in the use of the perforator, and often in the loss of the mother, I cannot conscientiously advise any practitioner, until he have become well acquainted, practically, with the application of the common, to attempt the use of the long forceps."—p. 459.

In these remarks it is our intention to recommend caution and circumspection in the use of the long forceps, and not by any means to proscribe them, or banish them from practice. On the contrary, we feel satisfied that in a certain class of cases

of limited frequency, they are, in competent hands, capable of ensuring the safety of both mother and child, when all other means would be inadequate; such are contractions of the pelvis, in which the conjugate diameter exceeds three inches; and a variety of accidental occurrences by which labour is occasionally complicated. It is to be observed too, that some individuals are in the habit of applying the long forceps after the descent of the head below the upper aperture of the pelvis, and when it is in a state admitting of the use of the short. It is, of course, evident that the same difficulties do not exist in this instance, and that the same cautions are not altogether required. We are not aware of any particular objections to the plan; at the same time that we confess ourselves unacquainted with any advantages it possesses over the ordinary mode of practice.

To elucidate the doctrine of instrumental delivery, we know of nothing so useful as the statistical reports of midwifery practice. For many valuable statements of the kind, we are indebted to various eminent men of our own and other countries; but professional opinion is so far from being unanimous, that they must long continue to be highly acceptable. The principal data required are, the total ratio of mortality of women and children; the ratio of mortality in instrumental cases, distinguishing those in which the long or short forceps, or perforator, were employed, and on what grounds. Lastly, the ratio of instrumental cases of these different kinds. Considering the number of obstetrical institutions in this country, conducted by men of competent abilities, it is only surprising that we are not more frequently presented with statements of the kind in question. The criterion of excellence, *cæteris paribus*, we should imagine to consist in the least possible artificial interference, combined with the lowest degree of mortality of mothers and children.

Puerperal Fever.—We have, on a former occasion, expressed our sentiments of the opinions inculcated by Mr. Burns with respect to this disease, and our conviction of the illusory nature of the distinction which he and others propose between it and puerperal peritonitis. In his text, he still adheres pretty closely to the doctrines he has formerly supported, and particularly to the recommendation of caution in the use of blood-letting. We will not refuse to allow that puerperal peritonitis does not, under certain circumstances, and particularly when the result of contagion presents itself with peculiar characters, calculated to increase its hazard, and to convey erroneous ideas of its nature; but we feel convinced that the fears suggested by its supposed typhoid or malignant nature are, in a great measure, imaginary,

and in as much as they lead to inactive inadequate treatment; have a direct tendency to increase its danger, and to perpetuate incorrect views of the essence of the disease.

In the notes to the present edition, Mr. Burns has himself furnished us with some facts contradictory to his own principles, and tending in an equal degree to establish the correctness of those we advocate.

"The disease," says he, "has of late been epidemic in this city, and more especially in the suburbs, particularly towards the East side of the city. I have made particular inquiry into the treatment, and fear it has not been so successful as the attendants could have wished; though the utmost care and promptitude were exercised. In a few instances, the lancet was neglected, and the tonic plan used, but without effect. The universal opinion I find to be in favour of the lancet, at the same time that its too general failure is admitted. Mr. J. Watson informs me, that in most of the cases he met with, the disease seemed to begin as hysteritis, and spread to the peritoneum. Copious bleeding, blistering, and large doses of opium were the remedies used by him, and only in one case did he think turpentine of service.

"Mr. S. Clark expressly says, in a statement he gave me to-day, that all the cases he saw cured, and his practice was very extensive in the disease, were by means of *very* copious depletion, both by venesection and purgatives. After copious bleeding, large doses of calomel were useful in the epidemic which prevailed lately at Kilsyth, but none recovered there nor in the country around without bleeding. He at first tried the tonic plan, but with universal failure; whereas, he says, a third part recovered by the other, if used early and boldly in constitutions previously sound. Dr. Baird, another intelligent practitioner, seems to think that in every instance the disease arises from some malposition of the uterus, and may be cured, if we early remedy that, by pressing with the hand externally, as I have stated at hysteralgia."—p. 573.

One caution we would suggest to those engaged in combating this formidable malady, viz., to be on their guard against the confidence with which large doses of opium, after blood-letting, have been recently recommended in this and some other inflammatory diseases. For ourselves, we freely confess our suspicion that the recommendation rests on hypothetical grounds; and confidently assert, that in our hands this plan of treatment, contradictory in theory, has proved worse than useless in practice. It has, in more than one instance, imposed upon us the necessity of recurring to depletion; whilst unprejudiced trials have left upon our mind an impression highly unfavourable to it.

Among the diseases of children, we had intended to make some remarks on the chapter which treats of what Mr. Burns stiles cerebral and spinal irritation; but on entering into an

examination of it, we find that it would be impossible, in any moderate compass, to give an intelligible account of a subject which would afford sufficient materials for a distinct treatise. By an extended generalization, of which, however physiologically correct, we very much doubt the practical utility or applicability. Mr. Burns has arranged under this head a vast variety of sympathetic disorders, if we may use the term; such, for instance, as remittent fever, the state to which the name of cerebral erethism has been given, spurious hydrocephalus, various spasmodic affections, disorders of the intestinal canal, and the host of indefinite symptoms sympathetically linked with them. To analyze such a complicated series would be a task of no small labour and extent, and we are not quite sure that our readers would admit the limited degree of novel information in our power to communicate, as a sufficient apology for the extent of the trespass on their patience.

Although brought up to the level of the present state of the science, the edition before us is not materially changed from those which have preceded it; and among his other merits, of which none can be more sensible than ourselves, we are pleased to find that Mr. Burns is a stranger to the petty arts of those who tax the pockets and temper of their readers, by the metamorphoses which every new edition gives rise to.

QUARTERLY HISTORY

OF

IMPROVEMENTS AND DISCOVERIES,

BOTH AT HOME AND ABROAD,

IN

Anatomy,	Surgery,	Materia Medica,
Physiology,	Practice of Physic,	Pharmacy,
Pathology,	Midwifery,	Chemistry,
Morbid Dissections,	Forensic Medicine,	Botany, &c.

Forming a useful Library of Practical reference.

I. ANATOMY.

M. Cruveilhier *on the Texture of the Liver**.—From injections of liquids, variously coloured, into the vessels of the liver, and the excretory canals of the bile, M. Cruveilhier infers:

1. That the granulations of which the liver appears to be composed, are surrounded with a dense cellular tissue, of a whiter colour than the granulations themselves.

2. That the ramifications of the hepatic artery are spread out in this cellular envelope.

3. That the ramifications of the vena porta surround the granulations themselves.

4. That the radicles of the supra-hepatic veins and those of the excretory canals are in the centre of the granulations.

MM. Leuret and Lassaigne *on the Tongue*.—In the work on Digestion, just published by our authors, we find a very minute description of the integuments of the tongue. The mucous membrane presents three distinct projections *(saillies)*—namely, sensible papillæ, epidermoid papillæ, and mucous cryptæ.

The sensible papillæ are numerous, and occupy about four-fifths of the anterior part of the surface, being implanted in it by means of a small pedicle. During life the rounded heads of the papillæ are more prominent than after death, but injection restores their form. They are supplied with nerves from the fifth pair, and in some instances twigs of the lingual branch have been traced to the papillary pedicles. The papillæ are of various

* Bulletin des Sciences Médicales, Janvier.

magnitudes, and at the base of the tongue are arranged in form of a V. They form the chief, if not the only, organ of taste.

The epidermoid papillæ are of a pyramidal form, and are grouped around the sensible papillæ, except at the margin and at the point of the tongue, where there are few of the former. Their base, pierced with a foramen, covers, without quite shutting the orifice of a crypta. They are best shown by macerating a tongue (the tongue of a cat is the best) in vinegar for some days, and then raising the epidermis, when it will be seen perforated with two species of holes—one, which previously contained the sensible papillæ, and the other smaller and very numerous, being those of the epidermoid papillæ.

The mucous cryptæ are particularly remarkable at the base of the tongue, and are formed by the membrane of the mouth in the intervals of the sensible papillæ. In proportion as we descend from man in the scale of animated nature, the organization of the tongue becomes less perfect; and, if we may judge from anatomy, the sense of taste less distinct.

Mr. Cæsar Hawkins *on the Nerves of the Uterus.*—

"The nerves of the human uterus are supplied from six different plexuses. The spermatic plexus within the abdomen, the great hypogastric plexus between the common iliac arteries, and four within the pelvis, two of which are situated on each side of the uterus. All of these have the peculiar appearance of the sympathetic nerves, and they are intimately connected with all the other nerves of the viscera.

"The uterine nerves in the dog, cat, rabbit, and guinea-pig, so nearly resemble those of the human uterus, that a minute description of them is unnecessary. The spermatic plexus is formed by branches of the renal plexus and two nearest lumbar ganglia of the sympathetic nerve; it supplies the horns of the uterus, the ovaria, and apex of the urinary bladder.

"The common hypogastric plexus, after having supplied the body of the uterus, gives off a large nerve of considerable length, which dips down into the pelvis, and unites with numerous branches of the third sacral nerve, and smaller branches from the second and fourth; a remarkable plexus is thus formed, which contains several distinct ganglia. It distributes nerves to the body of the uterus, the vagina, bladder, and rectum, the integuments of the upper part of the pubes, and the muscles of the inferior outlet of the pelvis. A few branches pass down to communicate with the fourth sacral nerve, where it gives origin to the pudic nerve. These nerves arise from the plexus in such a way as to resemble the ramifications of the venæ vorticosæ in the choroid membrane of the eye.

"The difference, therefore, between the nerves of the human uterus, and those belonging to the uterus in the quadruped, consists in the formation of only one lateral hypogastric plexus, and consequently in

the existence of only four nervous centres in the latter. There appears, also, to be more ganglia in the plexiform distribution of the sympathetic nerve. In the seal, several large ganglia are found in the broad ligaments of the uterus.

"The nerves belonging to the female organs of birds are distributed as follows:—The sympathetic nerve is found close to the origin of the spinal nerves, protected by the double heads of the ribs, between which it runs. The spinal nerves that correspond to the lumbar and sacral nerves in quadrupeds emerge near each other; and as the sympathetic nerve communicates with each of them, and forms a ganglion immediately after their appearance from the vertebral foramina, there is an almost uninterrupted ganglion of considerable length; from which numerous filaments go off to supply the oviducts. Others run upwards, and are distributed on the ovaria.

"Near the termination of the oviduct, in the cloaca, a plexus is formed, nearly similar to the lateral hypogastric plexus in quadrupeds, which is distributed in a corresponding manner to the oviduct and cloaca. There is also a similar pudendal nerve.

"Fewer ganglia are formed near the aorta than in quadrupeds, and scarcely any branches are sent from the common hypogastric plexus to the oviduct.

"In the frog, as there is no proper sympathetic nerve, the abdominal viscera are supplied directly from the spinal nerves. These, soon after they emerge from the vertebral canal, become slightly enlarged; this does not deserve to be called a ganglion. From each of the spinal nerves in the lower part of the back and loins, a small nerve is given off, which takes a direction towards the centre of the bodies of the vertebræ, where they unite with each other, and with the corresponding nerves of the opposite side. By this union, a flat nervous web is formed which stretches across the aorta, and extends downwards into the pelvis: this is analogous to the splanchnic plexus in hot-blooded animals.

"From the upper surface of this plexus many branches run upwards towards the intestines and kidneys, but the greater number are distributed on the ovaria.

"The lumbar nerves on each side give off several branches, which pass at once into the oviduct. The last lumbar nerves pass down upon the surface of the psoæ muscles, and, near the pubes, give off a branch, which takes a circuitous course towards the lateral portion of the bladder and the extremity of the oviduct. The continuation of the aortic, or abdominal plexus, in union with some branches of the sacral nerves, forms on each side of the pelvis a kind of plexus, which distributes branches to the cloaca and lower portion of the oviducts.

"The nerves corresponding with those which have been described in the frog, run almost entirely in straight lines, instead of having the intricate reticulated texture of the visceral nerves in hot-blooded animals. The ganglia are indistinct, and the fibres that compose them resemble those of the muscular, more than the visceral nerves."—*Philos. Trans. of the Royal Society of London for* 1825, page 70.

II. PHYSIOLOGY.

Dr. Barclay *on the Eyes.*—The author (whose opinions on anatomical and physiological subjects are of great value) has published an interesting paper in the Edinburgh Journal of Medical Science, from which the following is an extract:—

"The orbits, in man, are situate in the forehead, on each side of the nose, and at a distance so small, that both eyes may sometimes be directed to the same object, if placed before them in a space intermediate, and not too near. As the forms of the head, however, the forms of the neck, trunk, and extremities, are different in different genera of animals, with motions at the same time suited to their instincts, habits, and circumstances, we should not be surprised to see organs of vision varying in form, position, magnitude, and number, to accomplish all the variety of purposes for which they are intended.

"If two eyes, therefore, with varieties of motion and other advantages, be perfectly sufficient for the human individual in ordinary situations, even several thousands may not be more than necessary in those animals where the eyes are fixed, and where the position cannot so readily admit of a change. To illustrate my meaning still farther, let us take the human eye as the standard, and compare it with the eyes of quadrupeds, birds, insects, and some other animals, and try to ascertain in what cases, and for what purposes, they differ in form, position, and number, and also in relation to structure and capacity for motion.

"In the first place, the human eye is almost completely surrounded with the bones that compose the orbit, excepting near the pupil, where the light is admitted. Within the orbit are seven muscles; one for the motions of the upper eyelid, to open it when required; and one externally spread over the eyelids, to shut them instinctively when we fall asleep. Six muscles, inserted in the eyeball, are entirely within the orbit; four of these have their origin in the bottom of the orbit, around the sides of the foramen opticum, and are called straight muscles; the remaining two are termed oblique, distinguished by the epithets superior and inferior. The superior oblique rises, with the four preceding, at the side of the foramen opticum, and running forward, passes through a pulley, then across the eyeball, towards the temporal side of the eyeball, to be inserted into the sclerotic coat, not far from the cornea. The inferior oblique commences at the forepart of the orbit, runs at first towards the temporal side also, and, bending a little to the nasal side, is inserted opposite to the superior oblique, to roll the eye in an opposite direction. Four of the six muscles arising from the sides of the foramen opticum, and proceeding more directly to the place of their insertion, are termed straight muscles, in contradistinction to the oblique: one of them, inserted in the upper part, is called the levator of the eye; its antagonist, on the opposite side, is named the depressor;

the one inserted on the nasal side is the adductor, and the one on the temporal side the abductor. These four muscles, considering the place of their origin, would naturally draw the eyes backwards, into the bottom of the orbit, were they not opposed by the soft substance in which they are imbedded, and by the action of the two oblique, which have a tendency to draw them in an opposite direction. At any rate, the change of place, or the locomotion of the whole eye, is not very perceptible. We can distinctly observe the pupil moving upwards and downwards, between the levator and the depressor, as it were, upon an axis, extending from the nasal to the temporal side of the orbit; and we see it moving from right to left, as it were, upon an axis; extending from above downwards, and also rolling between right and left, as it were, upon an axis, extending from the bottom of the orbit towards the cornea. From this we are led to suppose, that these three axes pass through the eye near its central part, and that any change of position in the whole body of the eye is thus rendered unnecessary.

"Observing that the pupil can point upwards and downwards, to the right and the left, without any motion of the orbit, or, while the orbit is in motion, point as steadily to the object which it is examining, as the needle to the pole—it follows, that the eye moves not only in the orbit, but that the orbit also moves round the eye; as we may observe when looking steadily at a lighted candle, and moving the head upward and downward, to the right and to the left, and yet the pupil all the while pointing steadily to its object. As these motions, however, have certain limitations; when we wish to increase the sphere of vision, we employ occasionally the muscles of the neck in moving the head upwards and downwards, or turning the face to the right and the left, by its rotatory muscles.

"When the muscles of the eyes, of the head, and of the neck, are found insufficient to direct the pupil to every part in the whole circumference of the horizon, we can turn round on the heads of the femora, and see every point, behind and before, without changing the spot upon which we stand, and instinctively dilate or contract the pupils to regulate the quantity of the rays of light that may be deemed necessary for distinct vision.

M. Chossat *on the Urine.*—This able experimenter has published a number of very interesting details respecting the urine in health and disease. He has examined most minutely its variations of specific gravity and chemical composition, as caused by the quantity and quality of food and drink; of sleep and waking; of rest and fatigue. We are sorry that the nature of those details render them incapable of abstract or abridgement, and that we have not left room in this Number for their introduction; but we shall probably return to them soon.

M. Simon *on the Secretion of the Bile.*—"The secretion of the bile presents a very interesting problem of physiology, for the solution of which experiments have been made several times, that have proved

ineffectual, on account of the difficulties which accompany the ligature of the vessels of the liver. In order to determine whether arterial blood, or blood from the vena porta, furnishes the materials necessary to this secretion, it has been conceived that we must have it in our power to tie either together or separately the excretory canals, and the vessels which convey to the liver two kinds of blood. The ligature of these vessels, which had been judged impossible, may, however, be practised with greater or less facility on certain species of animals; upon rabbits, for example, it is very easy, but on account of the little colouration of their bile, the results afforded are very inconclusive; and, on the contrary, when pigeons are made the subject of experiment, a still greater difficulty is encountered, on account of the hepatic artery. But we can draw from them positive inferences:—

"1st. *Ligature of the Excretory Canals.*—The bile continuing to be secreted, and its evacuation impeded, the liver becomes choaked up, and filled with globules of a fine green tint. This colour is diffused over the whole surface of the organ, and affects the adjoining parts. The green tint is the best marked, the older the animal is, and the longer it survives.

"From ten to twenty hours after this ligature, the animal discharges by the anus matter absolutely green, and of the colour of the bile, with which the liver is overloaded. This colouration of the excrements augments in intensity even to death, and satisfies us that the green matter to which it is due exists solely in the cloaca, or that it is deposited by the ureters. This fact, when viewed in connexion with the observation of Messrs. Dumas and Prevost, who have proved that the biliary secretion was increased by the interruption of that of the urine, prove, that the kidney and the liver compensate more or less completely for the excretion of the product of their secretion, when it cannot take place through natural channels.

"2dly. *Ligature of the Excretory Canals, and of the Hepatic Artery.*—Twelve hours after having fixed these ligatures, the surface of the liver assumes a yellow tint, which colours also the adjacent parts: the canals are overloaded, and announce the presence of bile. Twenty hours after the ligature, the liver is found to contain a great quantity of green granulations, more numerous in the left than in the right lobe; the cloaca contains green matter, as in the preceding case. If the life of the animal be prolonged even to forty hours, the green colour of the liver and of the excrements becomes more deep.

"These last experiments are calculated to prove, that the secretion of the bile continues a long time after the liver has ceased to receive arterial blood.

"3dly. *Ligature of the Artery alone.*—In this case the liver is not choaked up, since the excretory canals are free; but after death, it must be acknowledged, that the secretion did, notwithstanding, take place; for we find bile in these canals, and the matters contained in the intestine present the bilious tint, as in the natural state.

"4thly. *Ligature of the Roots of the Vena Porta, and of the He-*

patic Canals.—The liver is then entirely discoloured, and shews no longer any thing more than a tint of a pale rose colour, like that of the lungs of birds; we do not meet with any trace of bile; the intestine contains only a grey or white pulp; the cloaca is filled with excrements destitute of any mixture of a green colour, and notwithstanding all this many pigeons have survived the ligature even thirty-six hours. If we tie only the principal trunk of the vena porta, and if we suffer the gastro-hepatic veins to enter it, the right lobe which receives them is, after fourteen hours, in the natural state, while the left is discoloured, and presents on its surface some traces of bile.

From these four series of experiments, the results of which accord perfectly together, we may conclude:—

1st. That the ligature of the hepatic artery does not prevent bile being found.

2dly. That the presence of this bile is manifest, when we tie at the same time the excretory canals.

3dly. That it does not appear doubtful but that it is the blood of the vena porta which contributes to the secretion of bile, since the ligature of this vessel stops this secretion.—*Nouveau Bulletin des Science par la Societé Philomatique de Paris, Aout* 1825.

M. Nobili *on Electric Currents in the Nerves.*—M. Nobili has endeavoured to ascertain, by means of his delicate galvanometer, the existence of those electric currents which are supposed by some persons to take place through the nerves in the animal system. The means adopted, were to introduce the wires of the instrument into different parts of the nerves; in which case, if currents existed, part would be diverted through the instrument, and rendered sensible by its effect upon the compound needle. Notwithstanding the extreme delicacy of the instrument, no traces of such currents could be perceived. In consequence of the observations of Amici and Herschel, Nobili also examined the circulation of the chara in a similar way, but could detect no electrical current. He found also that a current of electricity, sent through the circulating system of the chara, deranged and injured it.—*Gior. di Fisica.*

Mr. Boyle *on the Motion of the Patella.*—The author, who is already favourably known to our readers, has made the following interesting remarks at the close of a paper, giving a case of the successful treatment of a pseudo-anchylosed joint, by moxa and mechanical means:—

"In the healthy state, it is generally believed, and taught in the anatomical schools, that free motion in the patella is essential to action in the joint; nay, that, if there be any obstruction to the action of the patella, motion in the limb must, in consequence, be rendered impossible. But if the leg be moved upon the thigh,—that is, if flexion and extension be alternately performed, it will be found that the patella,

contrary to general opinion, is quite passive; that it is only the articulating ends of the femur and tibia which act; that the patella is then a fixed point, and that this bone does not move unless under the circumstance of perfect extension of the limb, when it may be moved in all directions with the fingers. This may be more fully illustrated upon the dead subject, on elevating the leg, by pulling upon the rectus femoris, without materially altering the position of the patella. This being the case, then, it is clear that, if even ossific union should take place between the femur and patella, motion might still be effected by an increased power in the lateral portions of the capsular ligament, acted upon by the natural contraction of the fibres of the rectus femoris; provided, however, that no similar pathological change existed between the tibia and inferior portion of the patella.—*Med. & Phys. Journ.*

III. PATHOLOGY.

M. Richter *on Necrosis.*—On this most mysterious and interesting affection of the bones, the celebrated author has lately published a valuable paper (promised to be continued) in Gräfe and Walther's *Journal fur Chirurgie*, of which the following is an abstract:—

"*Necrosis syphilitica.*—This species begins mostly in the substance of the bones, and extends lengthways. The pain (which may last for a considerable time) is of a boring, gnawing kind, and increases when the patient is warm in bed: At this time, indeed, it frequently is so severe, that he is obliged to rise. The swelling gradually increases, but does not acquire the size which is witnessed when the disease arises from other causes. The inflammatory process is slowly developed, never very acute, and does not extend beyond the part of the limb which has been previously swoln. The redness is of a pale rose colour, very limited, well defined, and not gradually lost in the surrounding parts. The temperature of the part is not high. The pain arising from inflammation of the soft part is more superficial and lancinating, and may be distinguished, by intelligent patients, from the boring, gradual, and deeper-seated pain, which is characteristic of this form of necrosis. The swelling of the limb is but little increased when inflammation of the skin supervenes, and every symptom is increased when the patient is warm in bed. Some time elapses before an opening takes place in the skin; and before the small portion of skin is absorbed it assumes a limited dark appearance. Subsequently, the skin in the neighbourhood of this opening is more destroyed than the cellular membrane beneath. When necrosis arises from other causes, the latter structure is most affected. Around the opening small superficial ulcerations form, which take on all the characters of chancres. The matter, which is from the commencement discharged from these openings in the skin, differs much from the qualities of healthy pus, particularly if the patient has been long affected with syphilis, and is of a cachectic habit of body.

Necrosis arthritica occurs only in advanced age. It arises either suddenly or gradually, and may show itself, at first, either upon the surface, or the periosteum, or the joints of the bones themselves. Its course is rapid, if the subject is of a full plethoric habit of body. The paroxysm of gout is, probably, suddenly suppressed. In patients of a different constitution, it proceeds more slowly. The pain is acute, and seldom felt in the middle of the bones, but more superficially upon the periosteum, and affects the whole circumference of the limb equally. In this species, warmth is borne without any aggravation of the symptoms; but, towards midnight, there is generally an exacerbation, the severity of which passes off in the morning. Upon any approaching change of weather, the pain is much increased. The swelling quickly follows the pain, and soon becomes considerable, as the inflammation begins mostly in the soft parts, and subsequently extends to the bones. The inflammation sometimes takes place at the same time with the swelling, and extends to the same distance. The redness is darker than that observed in the preceding species, and less diffused; but still gradually vanishes towards the edges. The sensibility of the inflamed part is often so considerable, that the slightest covering cannot be borne. The fistulous openings are small, and the edges easily become callous. The fluid at first discharged is thin and watery, and excoriates the adjacent parts; it sometimes, under circumstances of a favourable nature, becomes of a better quality.

Necrosis scrofulosa takes place, in most cases, during the period of growth, in those subjects who are of a generally scrofulous habit. It arises and proceeds very gradually, and may last for years, affecting at the same time several bones. The pains, at the commencement, are moderate, and observe no regular course; they are not increased when the patient is warm in bed, nor by vicissitudes of weather. The swelling also takes place very slowly, but extends over the whole of the affected parts; perhaps occupies all the limb, the under part being œdematous. It becomes gradually larger, and is not tense and hard, but remains of a doughy feel. In this state it may remain, the pain continuing for some time before inflammation supervenes. At last inflammation does take place, but does not rise in a high degree; the part appearing of a pale rose-colour, as in the syphilitic species; it is more diffused, however. When the disease is of long duration, and a great part of the bone is destroyed, the colour of the inflamed part becomes of a bluish cast, and darker. It is still distinguished by its asthenic character, by the swelling of the part, which remains doughy, and retains the impression of a finger. The fistulous openings possess the peculiarity of easily healing, and again breaking out; or the passage to the destroyed portion of bone is closed up by fungous growths, which shoot from the openings. The matter at first discharged has the colour and consistence of good pus, but is often mixed with shreds resembling the coagulated white of an egg. The pains frequently abate entirely after the swelling has broken.

Necrosis scorbutica.—Besides the general symptoms of weakness and

broken health, those which refer to the state of the bone are marked by the following peculiarities:—This species frequently supervenes upon other diseases of the bones; and, long before any destruction of the bone occurs, pain and other symptoms take place. The swelling is violent, and becomes œdematous, and is not for some time accompanied by inflammation; which at last, however, occurs very rapidly. The blush of colour is dark, bluish, and gradually lost in the surrounding parts. The sensibility of the parts, and the temperature, are not so highly increased as in the nervous inflammation. The fistulous openings form rapidly, become large, and approach each other. The sinuses are thin and flaccid, and are disposed to mortify. The matter poured out when the swelling bursts is thin, watery, brown in colour, and mingled with blood: it at last, perhaps, assumes a more favourable appearance. At the edges of the openings, light bleeding fungi form, which increase in size, and obstruct the exit of the contained matter. The contiguous veins are much increased in size.

Necrosis mercurialis resembles very nearly the scorbutic species. It runs a tedious and unfavourable course. The general symptoms of the mercurial poison gives the clearest indication of the nature of the malady.

Necrosis metastatica.—The soft parts surrounding the bones are usually first attacked in this species. The affection of the bones is secondary and sympathetic. The symptoms resulting from a metastatic affection, whether the hard or soft parts are affected, are sudden in occurrence, and rapid in their progress. Pain precedes the other symptoms but a short time: almost along with it arise swelling, inflammation, and abscesses; so that in a few days, or perhaps in a few hours, a portion of destroyed bone may be detected with a probe. The pain occurs suddenly, is very violent, darting, and constant. The swelling is considerable; increases rapidly when the soft parts are primarily affected, and more slowly when the substance of the bones is the seat of the evil. The metastatic inflammation is always limited, violent, and very painful. The redness of a deep tint, the temperature high. The abscess forms, and ruptures speedily. When the muscles and cellular membrane are at first attacked, one opening only is usually formed, and not several at distant points; which occurs more frequently during the development of the disease in the bony structure. The pus discharged is of a bad quality, brown, bloody, of a blackish colour, and thin.

Necrosis a causa mechanica.—The cause of this species depends upon the degree of violence inflicted. The progress is generally rapid; the symptoms are violent; and therefore correspond, to a certain degree, with those above described. The nature of the inflammation, and the result of the case, depend almost entirely upon the constitution of the patient."

Mr. Mackenzie *on the Closure of the Pupil in Iritis.*—The following very ingenious and plausible account of the closing of the Pupil in Iritis, is from the pen of the able Professor of Anatomy to the Andersonian Institution, Glasgow.

"In the Lectures on the Structure and Diseases of the Eye, which

I have given for the last seven years, I have ventured to ascribe the closure of the pupil in iritis to the fact, that the natural state of that opening (the state into which it falls during the insensibility of sleep,) is closure, not expansion. The discovery of this fact we owe to Fontana*: its truth has been acknowleged by Janin† and Cuvier‡, and may easily be ascertained by any inquirer. Approach a child fast asleep, and suddenly raise the upper eyelid, the pupil will appear all but closed, and only gradually, as the state of sleep is broken, will it be seen first of all to expand, and at last to accommodate itself to the degree of light to which the eye is exposed.

"Iritis is always aggravated, and often appears to commence, during the night, particularly after the operation for cataract. The probable cause of this is the contraction of the pupil, or rather the expansion of the iris, during sleep. Hence the propriety of applying the extract of belladonna to the forehead every evening, particularly in cases of incipient iritis.

"If no means are used to counteract the progress of iritis, the pupil is observed to become, day after day, smaller and smaller, and less and less dilatable, till it be completely closed and bound down by effused fibrin to the anterior hemisphere of the crystaline capsule. If belladonna only be employed, without the detraction of blood and the exhibition of mercury, the pupil will be kept dilated; and, if the narcotic has been applied early in the disease, the pupil will be widely expanded, and in this state will become adherent to the crystalline capsule. The detraction of blood, to lower the sanguiferous action,—the use of mercury, to prevent the effusion of fibrin, or to bring about its absorption, if already effused,—and the application of belladonna, to counteract the return of the iris to its natural state of rest, relaxation, and expansion, during sleep, makes up, then, the chief parts of the treatment of iritis, whether the disease be traumatic, atmospheric, or syphilitic; and the belladonna ought to be applied, not irregularly or merely every second or third day, but regularly every evening."

Dr. Hastings *on Empyema.*—The following conclusions are given by the authors in an excellent paper on Empyema in the Edinburgh Journal of Medical Science.

1st. That a sero-purulent fluid may be collected, as the result of chronic inflammation, in each of the sacs of the pleura; but it is more commonly found in only one of them.

2d. That the fluid may be only seated in a part of either of the right or left sac of the pleura, as in the superior or inferior part of one of these sacs. Thus a fluid may be found in the inferior part of the chest, resting on the diaphragm, and none in the superior part of the chest; the pleura pulmonalis and costalis, in the superior part of the chest, being united together by a false membrane.

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* *Dei Moti dell' Iride.* Lucca, 1765; page 21.

† *Memoires sur l'Œil.* Lyon, 1772; page 8.

‡ *Leçons d'Anatomie Comparée*, tome ii. page 409.

3d. That this inflammatory action, terminating in suppuration, may or may not be connected with disease in the cellular structure of the lungs; and, if it be connected, the disease, in the cellular structure, may be either of an inflammatory or tuberculous nature.

4th. Softened tuberculous matter may find its way into the sac of the pleura, and become mixed with the sero-purulent effusion; and in this case a quantity of gas is also found in the sac of the pleura. But a gaseous fluid may be present in the sac of the pleura, combined with sero-purulent effusion, when the latter has solely arisen from inflammation of the pleura, unconnected with disease in the cellular texture of the lungs.

5th. In sero-purulent effusion, the lung is always much compressed, and greatly diminished in size; and, in appearance, the lung often more resembles spleen than healthy lung.

6th. That when there is a sero-purulent effusion into the cavity of the chest, unconnected with disorganization of the cellular tissue of the lungs, paracentesis thoracis speedily relieves the symptoms, and often effects a cure.

7th. That when a copious sero-purulent effusion into the cavity of the chest is connected with so much disease in the cellular structure of the lungs, as to forbid all hope of eventual recovery, paracentesis thoracis may frequently be performed, as a means of lessening the sufferings of the patient, and of prolonging his existence.

8th. That the existence of adhesions, compressing and binding down the lung in chronic pleurisy, does not render the operation of paracentesis nugatory.

9th. That the use of the stethoscope and percussion is of the highest importance in cases of empyema, as certainly pointing out the existence of a fluid in the chest, and the best situation in which the incision can be made, if the operation of a paracentesis be performed.

10th. That measurement of the two sides of the chest will, in general, verify the indications thus obtained; the side which is affected with empyema being considerably larger than that which is free from effusion.

11th. That the succussion of Hippocrates (de locis in homine, xxviii. p. 340), always affords evidence of fluctuation, when there is gas, as well as purulent matter, in the sac of the pleura.

12th. That the fluid should not be rapidly discharged from the chest, and perhaps the operation would be more successful, if it were discharged in small quantities, at several separate times.

13th. That it does not yet appear which is the most proper period of the effusion for performing the operation, whether early, before the effusion is very considerable, or late, when the fluid is in large quantity; but since our knowledge of this affection, by means of the stethoscope and percussion, will now become more precise, we may anticipate the speedy solution of this question by experience.

14th. That active inflammation of the pleura does not often follow the operation; but this occurrence does occasionally take place.

15th. That a spontaneous cure, by effusion into the cavity of the chest in chronic pleurisy, not very uncommonly is brought about, either by absorption of the fluid, or by the matter finding its way outwardly through the parietes of the chest; but it would not be right, on this account, to place our entire dependence on this salutary effort of nature.

16th. That when persons recover from empyema, the side of the chest, which was the seat of the effusion, is often left in a contracted state; and this contraction, according to the extent of the previous effusion, may exist either in the whole or only in a part of the side of the chest that is affected.

17th. That, in cases of empyema, under the most unfavourable appearances, we should not despond; for recovery is not impossible when the symptoms might lead us to pronounce the most gloomy prognosis.

M. Fontanelles' *Case of Ascaris lumbricoides.*—It has been denied by certain helminthologists, and especially by Bremser and Rudolphi, that the worm in question is capable of piercing the intestinal tube, since it is destitute of an apparatus for that purpose. The following case, by M. Fontanelles, as observed in the Great Hospital of Milan, is published in our respected cotemporary, the Revue Medicale, as contradictory of the opinions of the abovementioned physicians :—

"J. Montovani, aged 13, of Milan, was brought to the Hospital on the 25th April, 1824. He had been affected, for ten or twelve days, with convulsive movements of the right arm and leg, without any loss of sensibility in the parts. He appeared to have been previously in health. Soon after entering the hospital he had a short paroxysm of epilepsy, and he was in a stupid state, which prevented any more history of the case being procured. At first he was thought by Acerbi, the physician, to be labouring under St. Vitus's dance; but, on the second visit, (same day) he recognized a case of severe eclampsia. Three grains of tartar emetic, dissolved in four ounces of water, with tamarind decoction, to be taken in the 24 hours. 26th. No vomiting, no stools since yesterday. Six grains of antimony for the next 24 hours. This dose was, by mistake, taken all at once, and only produced one motion. 27th. The spasms of the arm and leg were the same. He had now smart fever, the heat of the skin being increased, the eyes sparkling and bloodshot, perspiration copious, breathing short and laborious. Vensection to 10 ounces—four grains of antimony. 28th. The blood shewed no signs of inflammation—no vomiting—some stools. He had several epileptic seizures, and the convulsive movements continued. The patient's intellectual functions were completely lethargic. Eighteen leeches to the temples. Two grains of calomel and two of gamboge every three hours. 29th. Had two motions. He is worse in all respects. Died in the night.

Dissection.—Dura mater red and much injected. Some serosity under the arachnoid, together with some coagulable lymph. Substance of brain and spinal marrow sound. The lungs were gorged, but there was no other morbid appearance in the thorax. In the stomach were

found several lumbrici, with some degree of vitality remaining—no sign of inflammation in the lining membrane of the stomach. The mucous coat of the duodenum was very much injected, and appeared actually inflamed. A lumbricus, six inches in length, was found to have penetrated the ductis communis choledochus, reaching as high as the junction of the ductus cysticus and ductus hepaticus. The ductus communis was rent by the worm, the head of which came out through a hole in the ductus hepaticus. The gall-bladder was very much distended with viscid bile. Some lumbrici were found in the inferior part of the duodenum, and in the whole intestinal canal there were twenty in number, of the same animals. There was no other organic lesion than that above mentioned.

This is a very curious case. There can be little doubt that the sympathetic disturbance in the nervous system, which went the length of destroying life, was the consequence of the irritation produced by the worm penetrating the biliary ducts. The inflammation in the mucous membrane of the duodenum was the effect of the irritation, and can hardly be looked upon as the cause of death.

IV. MORBID ANATOMY.

Mr. WADE'S *Case of Apoplexy.*—William Richardson, a leather-dresser, aged forty-two years, a remarkably strong healthy man, of plethoric habit, was seized with apoplectic symptoms, and Mr. Wade was called in. He found him with stertorous breathing countenance extremely sunk, and of a pale blue colour; the pulse at the wrist was slow and oppressed; the pupils dilated; the whole venous system appeared overcharged. On opening a vein in the arm, the blood gushed out as on the division of an artery, and thirty ounces were very quickly taken. The bleeding diminished the force, and increased the frequency of the pulse; but not the slightest relief was obtained from it. He was then ordered to be cupped to sixteen ounces at the nape of the neck, and ten grains of calomel were ordered; only a part of which, however, could be administered. An enema was also prescribed.

"I saw him again at three o'clock, and found that no relief had been obtained; indeed, he was evidently dying; and expired at eight o'clock in the evening. I examined the body early next morning, and the following were the appearances which presented themselves:—

Dissection.—"On removing the dura mater, which adhered very firmly to the cranium, the whole venous system on the surface of the brain appeared excessively distended; the tunica arachnoidea, over the anterior cerebral lobes, was of a dirty yellowish colour, from lymph which had been effused under it. I cannot convey a better idea of the appearance which the brain presented through the tunica arachnoidea and pia mater, than by comparing it to a damson pudding: this appearance was produced by the congested state of the vessels of the cerebrum, and by the dark blood effused between the convolutions. On removing

the tunica arachnoidea and pia mater, which were firmly agglutinated together in every part, and were thicker than the dura mater, the under surface of the pia mater strongly resembled the mucous membrane of the intestines in a high state of inflammation; the pia mater itself being of a dark crimson colour, whilst the veins, which were in every part distended to the size of a common quill, adhering firmly to the membrane, resembled in some parts the injected valvulæ conniventes, and in others the rugæ of an inflamed stomach. The whole internal surface of the pia mater was covered with a thin layer of venous blood, coated in many places with lymph. The effusion of lymph appeared to have taken place chiefly over the coats of the veins. On opening the right ventricle, the corpus striatum was observed to be of a bluish-black colour; in its centre was a small portion of coagulated blood, double the size of a pea; the part round the coagulum presented the appearance of kidney. In the plexus choroides was a small tumour, the size of a large pea, which, on being cut, was found to consist chiefly of an earthy substance, and appeared like a small gland, thickly interspersed with a calcareous matter. The thalamus nervi optici was healthy. In the left ventricle, the pia mater, particularly in the anterior cornu, had a speckled appearance, from ecchymosis. On dividing the corpus striatum on this side, a coagulum of blood, larger than that in the right ventricle, was found in its anterior portion; and the parts around it had the same kidney-like aspect as the other. The internal part of the thalamus had a mottled appearance, from little spots of ecchymosis. The plexus choroides on this side contained a tumour, precisely similar to that in the right ventricle; but the plexus itself was of a lighter colour. No serum was contained in any of the ventricles; the middle one was quite free from disease. The velum interpositum was highly injected. The pia mater, on the base of the cerebrum, was in the same state as on its surface; as also that portion investing the cerebellum. All the sinuses were distended. Under the anterior part of the right lobe of the cerebellum, a small quantity of coagulated blood was observed. A careful examination was made of the arteries at the base of the brain: no ossification, however, was found.

"The heart was rather larger than usual; the lungs healthy; about half a pint of bloody serum in the right pleura; the viscera of the abdomen sound."

Mr. Fawkes' *Case of an Osseous Tumour in the Uterus.*—"A lady, 69 years of age, was attacked with symptoms of strangulated hernia, which, notwithstanding the reduction of the intestine, on the following day proved fatal, in about thirty hours. On examination after death, the usual appearances of extensive peritoneal inflammation were found, but the state of the uterus attracted more attention, as well on its own account, as because no suspicion seems to have been previously entertained of any particular disease in that organ:—

"The following description of the state of this part is taken from the report of Mr. Rose, by whom the body was examined.

"The uterus projected into the middle of the cavity of the pelvis, in a pyramidal form, and seemed at first to consist of one entire mass of bone. On taking it out of the body, however, the anterior part was found still fleshy, and on dividing this, the cavity of the uterus was also found perfect, though much compressed and reduced in extent; but behind this cavity, and imbedded in the substance of the uterus, a spherical mass of bone was found, as large as a pullet's egg. This mass consisted, as it is stated, principally of phosphate of lime, which, from the arrangement of the particles, seemed to the reporter to have been originally deposited in a tubercle, similar to that about to be described. Imbedded also in the substance of this organ, and a little below one of the Fallopian tubes, one of the hard rounded tubercles so often met with in the uterus, was also found. It was of a white appearance, as large as a hazel nut, and when cut into, exhibited the common structure of these bodies, being intersected by membranous septa. It is proper to add, that this lady had been the mother of three children, the youngest of whom, at the time of her death, was thirty-five years of age. Nor must it be omitted, that an oval pessary was found in the vagina, which, judging from its appearance, and the intelligence obtained from one of the family, had remained there, in all probability, for a number of years, entirely forgotten, as it would seem, by the patient herself, and by those around her."

Dr. GODMAN's *Case of Pelvic Tumour.*—The history of the following case is unknown. The subject, who was apparently between 30 and 40 years of age, appears to have been brought to the dissecting table. The following appearances were observed on opening the body:—

"A tumour, almost perfectly globular, and four inches and a half in diameter, occupied the greater part of the pelvis, compressing the rectum firmly, and nearly hiding the uterus from view. The anterior surface of this tumour was in contact with, but not adherent to, the peritoneum; while its superior surface was partly covered by the ileon and the caput coli. The bladder, pressed to the left side, was small, flat, and empty, and lay immediately between the anterior surface of the tumour and the internal face of the pubes; and on closer inspection, the fundus of the uterus, the ovaria, and the Fallopian tubes, were to be seen beneath it, low down in the pelvis. When the tumour, bladder, uterus, and rectum were removed from the pelvis, it became evident that the diseased mass grew from within the substance of the cervix uteri, as the peritoneal covering of the womb, and its peculiar texture, were to be observed extending over it; the uterine substance, however, becoming gradually thinner as it approached the upper part. The tumour was hard, incompressible, and remarkably spherical, with slight depressions or undulations on some parts of its surface. On cutting through the external covering—derived, as has been just stated, from the peritoneum and uterine substance—the whole tumour was found to have a crust or covering of bone, about the twentieth part of

an inch in thickness, and so hard as to require a saw for its division. This crust being divided, the mass was cut through the centre with a knife, and was found to consist of a dense, tough, semi-transparent, and elastic substance, apparently homogeneous, and more closely resembling cartilage than any thing else. The whole tumour appeared perfectly sound, and exhibited no trace of inflammation or ulceration in any part. Its origin was three inches wide, and had no communication with the cavity of the uterus. On laying open the uterus, its lining membrane appeared healthy and unchanged, and the cavity would have been of the ordinary size, but for the encroachment of another tumour, at the upper and back part. This second tumour was situated in the posterior thickness of the womb, and resembled the other in its structure, except that it had no osseous matter attached to it. The vagina was laid open from the back part, when a new and unexpected morbid appearance presented itself—the neck of the bladder being found extensively destroyed, and a free communication existing between the cavity of that organ and the vagina. The aperture by which this communication was formed was three-fourths of an inch in diameter, and had its edges rounded, and smoothly cicatrized. The surface of the vagina was covered with a tenacious mucus, but no appearance of inflammation was to be seen, even on close inspection. In other respects, also, the parts around were natural, except that every trace of the meatus urinarius had disappeared."

V. SURGERY.

Dr. Barry *on the Application of Cupping-glasses to Poisoned Wounds.*—The following conclusions are taken from the Report of a Committee of the Academie des Sciences, appointed to examine a Memoir by Dr. Barry on the experiments made by him on poisoned wounds:—

"1st. That the immediate application of a cupping-glass to a poisoned wound, will prevent the absorption of the poison, and avert all untoward accidents.

"2dly. That the application of a cupping-glass to a poisoned wound, even after a part of the poison has been absorbed, and has begun to produce its proper effects upon the system, will arrest the progress of these events, and prevent their recurrence so long as it is permitted to remain on the part.

"And, 3dly. That after the cupping-glass has been applied to a poisoned wound for a certain time, the poison may be removed from the surface, and all unpleasant consequences averted, by simply washing the part with a little water.

"The accuracy of these statements was fully established before the committee, by experiments performed with various poisons on dogs and rabbits. The influence, therefore, of atmospheric pressure on the pro-

cess of absorption, may now be considered as incontestibly proved; and the establishment of this fact may, perhaps, be regarded as a discovery, notwithstanding the ideas previously put fo th by others on the subject, and the empirical practice of sucking poisoned wounds, which has been so long known to the profession."

Mr. HUME, of Long-acre, *on the same subject.*—In justice to a gentleman, whose reputation as a chemist stands deservedly high, we here republish a short paper addressed to the Editors of the Philosophical Journal (vol. xii. p. 344.) more than twenty years ago. We think it not a little strange, that Dr. Barry should have made no allusion (so far as we are aware) to this paper in what he has published on the subject. It is scarcely possible that he can plead ignorance of its existence.

"Gentlemen, "Long-acre, Sept. 13, 1804.

"On reading in the Medical and Physical Journal for April, the ingenious method proposed by Mr. Hardman, to open an abscess by means of an exhausted cupping-glass, it naturally occurred to me that the same mode could be most effectually employed in various other instances, where it may be requisite to extract morbid or extraneous fluids, especially when no time should be lost to afford relief.

"Those who are conversant in surgery and its daily practice, may, possibly, suggest a great variety of other cases, in which this mode of operating can be advantageously followed. There is, however, one of the utmost importance, in which it may affect an immediate cure, and completely prevent the most afflicting and direful malady to which a living body is liable, that is *hydrophobia.*

"It can only be ascertained by fair and repeated experiments, whether we can depend upon this as a secure preventive; and it certainly should not be condemned or refused until we have had most undeniable proofs of its inefficacy.

"The moment an accident of this kind has happened is, evidently, the only period to apply the glasses with any prospect of success. A more powerful degree of suction can easily be obtained by the use of a glass receiver, furnished with a stop-cock, and exhausted by the air-pump. The mouth of this vessel should not be very narrow, as it may be proper and convenient to cover all the tooth-marks at once, if possible, or in as rapid succession as may be. The blood, if it flow, should be instantly wiped off with a sponge; and it would be prudent to repeat the operation at least once more.

"Besides canine madness, this method should be tried in all similar cases; and the very same means pursued, whether the wound has been inflicted by a rabid or poisonous animal, or by a poisoned instrument.

"I may, perhaps, have stumbled upon what has already been publicly noticed and recommended by others; if so, I can only assure you, that this communication arises from the best intention; and should it be found destitute of original merit, I hope you will reject it.

"JOS. HUME."

M. Amusat *on Forced Injections for Retention of Urine.*—"It will appear curious, if not incongruous, that when a bladder is distended with urine, and cannot disgorge itself in consequence of a stricture in the urethra, the patient may be relieved by forcing some more fluid into the bladder. It is to be remembered, however, that the cause of the retention, in such cases, is not the fulness of the bladder, but the obstruction in the passage. This obstruction being overcome by a stream forced inwards, the bladder may then be able to relieve itself. Such, at least, are the assertions of a French surgeon, M. Amusat, (before the Academy of Surgery in the French metropolis,) who appeals to facts in support of his assertions. M. Amusat passes a flexible tube as far as the obstruction, and then, by means of an elastic gum-bottle, gently forces a small quantity of fluid through the stricture. The consequence is, (and a number of trials have been made) that the urine flows out again, and the retention is relieved. The experiment involves no danger, and certainly may be fairly had recourse to, previously to the operation of puncturing the bladder, or using much force for the introduction of a bougie."

Extirpation of the Eye.—The following case is taken from the *Magazin für de gesammte Heilkunde:*—"A fungoid tumour having developed itself in the right orbit of a little girl, about seven years of age, who had never shewn any previous signs of disease, increased regularly, but without pain, headache, or vomiting, until the eye was pushed out of its natural situation. On the ninth week of the disease, the eye, as well as the fungus, was removed. One month after the operation, a fungous excrescence formed in the orbit, which bled a good deal: after it was removed, it was discovered to be a portion of the cortical substance of the brain. On the succeeding days, violent inflammation of the encephalon, with delirium and obstinate vomiting, came on. A few days afterwards a fresh excrescence appeared, and increased to such a size as to touch the lips. The same appearances next took place in the left eye; and paralysis of the upper extremities occurred, followed by coma, and death. On opening the body, an extravasation was found between the membranes of the brain, the substance of which was softened. The fungus in the orbit was flaccid and fœtid: the root of this vegetation was of a cancerous nature, and adhered to several bony surfaces; for example, to the pterygoid process of the sphenoid bone and to the sella turcica, extending principally in the direction of the ramifications of the fifth pair of nerves."

Dr. Macgill's *Case of tying both Carotids successfully.*—The only account yet published, we believe, of this interesting case, is contained in a letter from Dr. Cohen, of Baltimore, to Dr. Rodgers, of New-York, which is as follows:—

"I regret with you, that my friend Dr. Macgill has not made known his interesting operation of tying the two carotids. The patient was a female, with fungous tumours of both eyes, whether fungus hæmatodes or not, I am not now sure of. The eyes, however, were both destroyed,

and presented an ugly confused mass, which protruded beyond the sockets, and the disease was increasing every day. From the success attending the operation of tying the carotid for tumours about the head, Dr. Macgill was led to adopt this plan in treating his patient, and finding the effect of tying one carotid to be limited to one tumour, he ventured upon the bold attempt of arresting the progress of the other, by cutting off also its supply of blood, which he did about a month after the first operation. It is some time since I heard of the patient, but several months after the last operation she was doing well, and the tumours subsiding. The case occurred near Hagerstown, Maryland, about a year and a half or two years ago. There were some interesting physiological facts observed during the progress of the case, which Dr. Macgill mentioned to me, but which I must pass by for the present, hoping Dr. Macgill will be induced to give a full account of every thing connected with this first attempt (I believe) of tying both carotids in the human subject."

Dr. N. Smith's *new Instrument for the extraction of foreign substances from the Œsophagus:*—

"I have twice been called upon to remove coins from the throats of children. In both instances, they had descended to near the inferior extremity of the œsophagus, where the passage is a little narrowed, just before entering the stomach. Of course, they were entirely beyond the reach of forceps, or any instrument which might be employed to grasp and thus withdraw them.

"The instrument which the exigencies of the case suggested, and with which I succeeded, was unlike any thing which I have known to be employed for a similar purpose. A very few words will be sufficient to give an idea of it.

"The shaft of the instrument is a rod of whalebone, twenty inches in length, and of the size of a small quill. Half an inch from one extremity there are attached, at acute angles, like the barbs of an arrow, two wings of silver, an inch and a quarter in length, a quarter of an inch wide, and so thin as to be very elastic and flexible. The extremity, which stands off from the instrument, is convoluted so as to render it blunt, and is a little curved inward toward the shaft of the instrument. The two wings are pinned to the shaft of the instrument, and may be continued over its extremity, which should terminate with a bead, or obtuse point.

"From the position of the œsophagus between the trachea and spine, the faces of the coin present forward and back. When the instrument is thrust down the œsophagus, avoiding the glottis, as may be done without difficulty, and presenting the barbs one forward and the other back, it will pass either behind or before the coin, and the barb will spring beyond it, and catch it between itself and the shaft, when it may be very easily withdrawn. The manner in which the shaft is embraced by the œsophagus above, prevents its slipping off laterally. In both the cases alluded to, I accomplished the extraction of the coin without any

difficulty, and at the first trial. In the second case, after I had once raised the coin into the mouth, the child instantly swallowed it again, though I had almost seized it with my fingers. It returned to the same place, and I again withdrew it as at the first trial.

"The barbs are made so thin that should they catch in any of the follicles of the œsophagus, they would be everted sooner than rupture the membrane."—*Amer. Med. Rev. for Sept.*

Dr. Clarke Wright's *Case of a Tumour in the Antrum Highmorianum.*—"Willam Latham, a healthy looking boy, aged 13, came to the Dispensary with a tumour, the size of a hen's egg, upon the left side of his upper jaw. It first made its appearance about six months previous, and had gradually increased since, without any pain or inconvenience. At times, a few drops of blood had oozed from the nostril of that side, but there was no obstruction of tears. This tumour proved to be of the osteo-sarcomatous kind, growing within the antrum, the facial and palatine portions of whose parietes were wholly absorbed by its pressure. All the teeth of that side were loose, except the last molar. The first molar tooth was extracted, and a puncture made into the antrum, but nothing escaped. The physicians of the Institution, and consulting physicians Steevens and Cheeseman, having decided that an operation was necessary, by extirpating the tumour and its diseased connexions, for the relief of the patient, it was accordingly performed at the Dispensary, on Monday, November 21st, by myself, in whose district the patient resided. The physicians of the Institution and consulting physicians were present, and assisted in the operation.

"The boy being seated in a dentist's chair, and firmly supported, an incision was commenced at the left commissure of the mouth, and continued to within an inch of the outer canthus of the eye. The integuments were then dissected as far as the orbit and the nasal process of the os maxillare, following its osseous border down to the septum. The lower portion of the integuments was also dissected away, so as fairly to expose the face of the tumour. During this dissection there was some hæmorrhage, and it became necessary to secure five or six small arteries. The flaps being held away, a perforator was now introduced into the sound bone, about half an inch below the inner canthus, and passed near the junction of the longitudinal and transverse sutures of the ossa palati. Through this opening a narrow-pointed saw was introduced, and with one finger on the point, was brought out at the socket of the middle incisor tooth, (the tooth having been previously extracted) including in its course the left anterior palatine plate, and a small part of the nasal portion of the maxillary bone. Through this opening a firm elastic saw, a quarter of an inch wide, was introduced to the place where the perforation was first made. The operator having hold of both ends of the saw, directed it in an outward and downward course, passing between the orbit and infra-orbitary hole, along the suture of the os malæ with the malar process of the maxillary bone, and brought it out at the socket of the second molar tooth.

"On examining the tumour after extirpation, it was found to be at-

tached by a broad pedicle to the nasal portion of the antrum; it was of a granular structure, and sparingly interspersed with bony matter. The lips of the wound were then adapted together by three interrupted sutures. The operation occupied about thirty minutes, and the lad sustained it with a great degree of fortitude for one of his age.

"*Tuesday*, 22*d*. The patient slept six hours last night, and is free from pain; takes liquid nourishment, and is enjoined not to move his lips or jaws.

"*Wednesday*, 23*d*. Slept well during the night. The saliva constantly running from his mouth. There is a moderate degree of inflammation of the integuments of the left cheek.

"The parts remained in this state for four or five days, at which time the swelling and inflammation began to subside, and the stitches were removed, the wound having united principally by the first intention. Fourteen days after the operation, the boy went into the country with health confirmed. He has since returned: his speech is slightly defective, but the appearance of his face has improved from the operation."

Dr. James Johnson *on Erysipelas and Phlegmon.*—We think the following extract from the Medico Chirurgical Review deserving of attention:—

"In the October Number of the Edin. Journal, there are two communications on the treatment of erysipelas—one from Mr. Maclean, of Kilmalcom—the other from Dr. Burrell, Assistant Surgeon of the 72d Regiment, at Edinburgh. Mr. Maclean gives the detail of one case, where general blood-letting and active purgation, with cold applications, conducted to a successful issue an erysipelas of the face. Dr. Burrell details two cases, where extensive leeching, the warm bath, and fomentations, led also to recovery. In the latter cases, however, the erysipelas was a supervention on other diseases, and, therefore, not of an idiopathic nature. The treatment pursued by these two gentlemen cannot be said to be identical, though, in the hands of both, successful. We all know that many practitioners pursue a diametrically opposite methodus medendi, and they, too, cure their patients. Thus, at St. George's Hospital, where erysipelas may be said to be at least as regular in its visitations as the medical officers themselves, the cordial plan of treatment is generally adopted, and the majority of the patients recover. But, says Dr. Burrell, in his comment on the text of Dr. Good, erysipelas is an inflammation—"and if not made to yield to an antiphlogistic plan, cannot reasonably be expected to give way to any other." This erysipelas must, therefore, be an unreasonable disease, and, in despite of theory, does give way very often to other than depletory plans of practice.—Mr. Maclean skilfully shields his bold measures in erysipelas under the sanction of the Editor to whose Journal he addresses his paper. "In conclusion, says he, "I cordially agree with Dr. Duncan in thinking that—'there is nothing in the nature of erysipelas essentially different from other inflammations'—

and, in my opinion, we ought to treat it as fearlessly as we do other affections belonging to that class of diseases." With submission to Dr. Duncan and Mr. Maclean, we would take the liberty of doubting the identity of erysipelatous and phlegmonous inflammation; for example, the former is very generally a constitutional, the latter a local disease. The one has a constant tendency to spread—the other to circumscribe its sphere of operation. The erysipelas is accompanied by a typhoid, the phlegmon by an inflammatory pyrexia—the former often ends by transference to internal structures—the latter hardly ever does so. Now, if we are to break down distinctions so marked and unequivocal, and amalgamate the diseases and their modes of cure, why make any distinctions at all, but treat all diseases alike? Why has Dr. Duncan given a valuable paper on "Diffuse Inflammation of the Cellular Membrane," and suggested a modified treatment in the same, if he identifies erysipelas and phlegmon?

We make these comments, not with the view of preventing due depletion in certain cases of erysipelas, but to prevent the young practitioner from regarding this dangerous inflammation as essentially the same with common phlegmonous inflammation, and to be cured by simple energetic depletion. If he pursue the latter mode of practice indiscriminately, he will often have to deplore the loss of his patient's life, and perchance, in the end, of his own reputation.

Dr. N. Smith's *Improvement of the Operation for Amputation.*—Dr. Nathan Smith, of Yale College, proposes an improvement in the operation of amputation, the object of which is to obviate the formation of the two projecting portions of skin, which, according to the present mode of operating, usually remain, one on each side of the limb, and render the stump liable to excoriation and inconvenience from an artificial limb. His plan also proposes to prevent the projection of the bone below the muscles, where it is covered only by skin and cellular membrane:—also to give a rule, by which the projecting flesh, which is intended to cover the bone will, when healed, form a round, solid and seemly stump, avoiding the too great projection of the bone, as in large limbs, and a large mass of flesh which falls below the bone in emaciated subjects, which is sometimes filled with matter during the cure.

Dr. Smith objects to the common tourniquet as worse than useless. He adopts the plan recommended by an operator in the city of Edinburgh—a common silk handkerchief tied loosely round the limb, passing a piece of wood a few inches under it, and then twisting it so as to form a quick compression. The common tourniquet acts too slowly, and arrests the blood in the veins as well as in the arteries. By elevating the limb a little, it is exhausted of its blood; the handkerchief and the stick, by acting suddenly, then obviate this objection. In order to secure the loss of a small quantity of blood, during the operation, he advises pressure on the artery, immediately before tightening the handkerchief, by turning the stick, at the same time elevating the limb. The common tourniquet would answer equally well, particularly as it

effectually places the operation beyond every embarrassment which might occur from accident, and as pressure on the artery and raising the limb to evacuate the blood before its application are equally practicable, as in the other modes. In the army, where great certainty is necessary, and few attendants are available, the tourniquet cannot be dispensed with. Pressure on the artery at the groin, and on the subclavian, as it passes over the first rib by the fingers, it appears is not to be relied on; as death nearly occurred in one instance of an operation for the removal of the humerus, where the artery was pressed by the fingers, as it passed over the first rib; the vessel very fortunately, however, was suppressed by grasping it with the fingers, before death took place. This disposition to simplify instruments is certainly laudable, but where it places in jeopardy the life of the patient, it is not to be admitted. The surgeon himself might properly be considered a subject of legal retribution, if to save a little in the price of instruments, or a little trouble in the use of them, he endangered the lives of those committed to his care, by deviating from the common modes so long proved, and so highly estimated.

VI. PRACTICE OF PHYSIC.

Mr. Baker to Dr. Kent *on Injections of Cold Water in Dysentery.*—"Whatever opinion may be entertained of the remote or the proximate causes of dysentery, one thing is very certain, that the villous coat of the large intestines is in a state of considerable inflammation, attended with fever, and all the well-known distressing train of symptoms that take place from obstinate constriction.

"Most practitioners discern two stages of the disease. In the early stage I have generally used the lancet with the best effect, together with free and copious purging, for which purpose I have found nothing to compare with calomel, together with antimonial diaphoretics. Viewing dysentery as presenting an inflamed state of the lower intestines, I have been led to adopt a practice predicated upon that view, which, although novel in a great degree, has been attended, in every instance, with the most certain success. I use very cold water, (rendered so even by ice,) thrown up the bowels in form of an enema, every half hour. This course, in some instances, I have directed to be continued for twenty-four hours, or more, without intermission. The effect has more than equalled my expectations. Every distressing symptom is speedily alleviated, the tenesmus subsides, the fever abates, and the dejections assume a better aspect. I would not be understood as depending upon this remedy alone, but as part of the plan of cure, it has proved of infinite advantage in every instance where I have employed it. This practice appears to me to be sanctioned by the soundest reason; for, if the gut be topically affected with heat and inflammation, what, let me ask, can be more likely to allay that inflammation, than bathing the inflamed coats of the intestine with cold water? We use it to inflamed

eyes, and other parts, then why not the bowels? Nor has cold water thus applied to the lower intestines, at any time forbid me the use of all the other remedies commonly employed. I bleed, I give calomel, with other purges; I use diaphoretics, the warm bath, or whatever the particular symptoms may at the moment call for, without any interruption to the injections of cold water. I am very much inclined to think, that too much dependence in dysentery is often placed upon opium, and that it is generally resorted to too early in the disease. The temporary ease it procures is delusive, while the inflammatory diathesis is heightened by its stimulating as well as its costive influence.

"The idea of using cold water in dysentery first occurred to me in the Summer of 1823. I directed its use with ice, in the case of an interesting little boy, the grandson of Mr. Davies, formerly innkeeper in Washington. This child was extremely ill, and I almost despaired of him, but he recovered. I have prescribed it since with undeviating success in many cases, in conjunction with other remedies."

Mr. Blacket *on Carbonate of Iron for Tic Douloureux.*—The following is the history of a patient given by himself in a letter to Mr. Blacket:—

"In reading the Medical and Physical Journal for October, page 288, I find a treatise on the tic douloureux, and the mode of treatment, written by you. I was pleased with your description, and particularly so, because I have been labouring under the same tormenting malady for this last year, at intervals: but, at the same time, I was disappointed in not finding you so warm in your recommendation of a curative remedy, as in the description of the symptoms and nature of the disease. I am happy to say that, according to the plan of Mr. Hutchinson, the disease was arrested in about thirty-six hours; and I hope and trust that it may hold good, and that I may not have a relapse.

"This time twelvemonths I was riding on horseback without a great coat, and without the usual precaution of tying a silk handkerchief round my neck; the wind blowing north-east, and a damp atmosphere, I felt an unpleasant cold sensation upon the zygomatic arch; this daily increased, until I experienced at times great pain, yet such as could be tolerably borne. Since that time I have had a few attacks more severe, and which induced me to try one-drachm doses of the carbonate of iron every six hours, mixed with honey; and a draught with it of the decoction of bark and infusion of cascarilla, with sulphuric acid. This gave relief, but did not cure the disease.

"The next attack, I tried gum assafœtidæ, ferri sulphatis aa ʒss. fiat massa, et divide in pilulas xij. I took nine of these pills in the evening of the attack; and the draught, with bark, as before. This gave me more relief than the other, but appeared not sufficient to arrest the disease.

"The next attack was in the evening of Sunday, after being at church. I felt a stream of cold air upon the vulnerable part, and expected another touch of it when I got home. In the evening I was seized with a paroxysm, more violent than any before. I directed my

assistant to bring me a large tea-cupful of the carbonate of iron, mixed with honey. I immediately took four large tea-spoonfuls of it, with a draught, containing one drachm and a half of the extract of sarsæ, and an ounce and a half of peppermint water, made doubly strong with the essential oil. I went to bed, and perspired through the night. My pain became tolerable. I persevered in the same doses every six hours, day and night, so that the tea-cup, which contained eight ounces of the carbonate of iron, I took at six times: at that rate, the quantity I took for each dose was one ounce and two drachms, accompanied with one drachm and a half of the extract of sarsæ, every six hours. This plan was continued for two nights and one day; the disease being arrested. I then took the same quantity of iron twice a-day, and the dose of sarsaparilla at night, for a few days; and I am in great hopes of not having a return.

"It proves what large doses of medicine can be borne, when under the influence of great excitement. The medicine had the effect with me of opening the bowels plentifully, but without griping.

"I also applied a cataplasm, made with two table spoonfuls of oatmeal, one table-spoonful of flour of mustard, and white wine vinegar heated, to make it into a proper consistence; this I kept to the part for a few minutes at a time, as long as I could bear the heat."

Dr. J. Davy's *Case of Ascites treated with large doses of Digitalis.*

"Cornelius Wood, First Veteran Company, aged 37; admitted 27th January, 1823. An Englishman; no trade; eighteen years in the service. Has never used mercury. Has served in the Mediterranean, in the Peninsula, in France, and in Canada. In 1814, while with his corps in Portugal, had an attack of fever, attended with mental alienation; for which he remained in hospital four months. He has also, for the last three months, been occasionally affected with tertian intermittent, and latterly with symptoms of pneumonia; for which he has been bled and blistered. Has used some sulphate of zinc pills for the ague.

"He is now admitted with an anasarcous affection of the head, face, and lower extremities, and hydropic tumefaction of the abdomen.—Bowels costive; cough, and expectoration; tongue white, skin pits.

℞. Pulv. jalap. comp. ʒj.

"28th. The powder operated briskly. There appears to be some tendency in the swelling to subside. Pulse full.—Venesectio ad ʒxij.

℞. Extract. conii, gr. xij.
Pulv. digitalis, gr. x.
Sodæ subcarbon. ʒss.
Infus. gentian, ʒiv. M. fiat mistur. quotidie sumend.

"January 31. A portion of his urine voided yesterday, was examined. It contained a large proportion of mucus, and deposited much red

sediment. It coagulated slightly, from the effect of heat and of nitric acid.

℞. Spirit. ætheris nitric, *ss.
Vin. opii, gtt. xx.
Decoct. cinchonæ, ℥j.
Tinct. rhæi, ℥ss. M. fiat haust. statim sumend.

℞. Extract. conii, gr. xij.
Pulv. digit. gr. xv.
Pil. hydrarg. gr. v.
Syrup. zingib. q. s. M. divid. in pil. vj. Capiat ij. omni nocte.

"February 2d. Continues much the same. Has had no stool since last report.

℞. Sulph. magnes. ℥j.
Antimon. tartarisat. gr. j.
Vin. alöes, ℥j.
Infus. sennæ, ℥ij. M. Capiat ℥j. quaq. hora donec, &c.—Cont. mistura et pilulæ; omitt. haustus.

"3d. Vomited part of his mixture yesterday, but had afterwards several loose stools.—Cont. mistura sed augeatur. Pulv. digitalis ad gr. xv. in die.

"4th. Had a severe attack of fever and ague yesterday. Has voided about three pounds of urine the last twenty-four hours.

℞. Decoct. cinchonæ,
Infus. gentian, ℥ij.
Tinct. sennæ, ℥ij. M. Capiat quotidie; et cont. mistura digit.

℞. Supertart. potassæ, ℥ss. Divid. in chart. iv. sumat j. 3tia. quaque hora.

"5th. Complains to-day of difficulty of breathing and cough. Less urine; bowels loose. Rested ill.—Cont. medicam.

"6th. Says he is at present threatened with an attack of ague. Bowels loose; urine more copious. Pulse 60.—Cont. med.

℞. Spirit. æther. nitr. ℥j.
Æther. sulphur. ℈j.
Vin. alöes, ℥j.
Aquæ menth. piper. ℥j. M. fiat haust. statim sumend.

"9th. Ague and fever very slight.—Cont. medicam.

"11th. Complains of nausea, and has a good deal of ptyalism.—Cont. sed. aug. pulv. digit. ad gr. xx. Omit. pil. c. hydrarg.

"14th. Feels rather better. His mouth is still sore.

℞. Extract. conii, gr. xij.
Pulv. digit. gr. xxv.
Extract. taraxaci, ℥j. Fiat mass. et divid. in bolos No. viij. Capiat j. quaque hora.

"17th. Bowels rather confined. Says he has caught fresh cold. Some dyspnœa. Salivation diminished. Urine of a bright red colour,

* The quantity in the original is not stated.

from purpurate* of ammonia. Pulse rather full. He feels better in every respect.—Cont. med. Capiat pulv. rhæi ℈j. in infus. sennæ ℥ij.

"21st. Progressively improves; appetite pretty good; bowels regular. Pulse soft.—Cont. mistura et pilulæ ut antea.

"22d. Urine still high coloured; respiration more easy; bowels confined. Pulse 64, and rather full.

℞. Pulv. rhæi, gr. xij.
Sodæ sulph. ℥ij.
Infus. sennæ, ℥j. M.

"23d. Had three alvine evacuations since yesterday; urine continues high coloured. Pulse soft; tongue and skin moist; appetite good. Threw up a little coagulated blood yesterday, while coughing. —Venesection to ten ounces.—Cont. med.; aug. pulv. digit. ad gr. xxx.

"24th. Feels better. Pulse 72, and soft; bowels regular; blood taken buffed; urine not so high coloured; tongue moist; appetite good. Sleeps pretty well.—Cont. med.; et ad gr. v. pulv. digit ad misturam.

"26th. Bowels rather confined; in other respects better.

℞. Sodæ sulph. ℥ij.
Infus. gentian. ℥jss.
Aquæ fontanæ, ℥jss. M.

"29th. Urine of nearly a natural colour; bowels quite regular pulse soft, and natural; tongue and skin moist; appetite good. When he lies on his left side, he is seized with a troublesome cough, but has no pain.—Cont. med.; aug. digit. ad gr. x.

"March 2d. Progressively improves. Bowels regular; appetite good; sleeps well.—Cont. med. ut antea.

"4th. Urine of nearly a natural colour; bowels regular; appetite good. Swelling quite gone.—Cont. med.

"7th. Daily improves. Bowels regular; appetite good.—Cont. med.

13th. Progressively gains strength; look improved. Bowels regular; appetite good.

"11th. Convalescent.—Omit. med.

"12th. Discharged.

Mr. Mackenzie *on Nitrate of Silver in Croup.*—The following communication from Mr. Mackenzie has drawn forth (we understand) something like a reclamation by the friends of an extensive practitioner in Glasgow. Utility, and the cause of truth, we think, should outweigh all such feelings. We give Mr. Mackenzie's practice in his own words. :—

"The fact to which I refer is, that the exudation of fibrin very frequently commences on the surface of the tonsils, thence spreads along the arches of the palate, coats the posterior surface of the *velum palati*, sometimes surrounds and incloses the uvula; and at last descending, covers the internal surface of the pharynx and œsophagus, the larynx

* What does Dr. Davy mean by this?—Ed.

and trachea. That this is the frequent progress of the fibrinous exudation, I am convinced, from the careful and repeated observation of the phenomena during life, and upon dissection.

"What is of much more importance, however, than the observation of a pathological fact, is the ascertained efficacy of a means of cure for this disease. Not merely have I repeatedly found the application of a solution of nitrate of silver completely successful in removing the fibrinous crust, covering the tonsils, velum, and uvula, but I have been led to attribute the rapid alleviation and ultimate removal of all the other symptoms to this remedy, even in cases in which, from the severity and peculiar signs of the complaint, I had no doubt that fibrin had already exuded from the lining membrane of the larynx and trachea.

"The solution which I employ is a scruple of nitrate of silver in an ounce of distilled water. By means of a large camel-hair pencil, this solution is to be freely applied, once or twice a-day, according to the severity of the symptoms, to the whole lining membranes of the fauces. The surface of the tonsils, or wherever else the fibrinous crust is actually in view, will, of course, be particularly attended to; but I do not hesitate to push the pencil to the lower part of the pharynx. This remedy, so far from being productive of any irritation, beyond the mere mechanical and temporary one attending its employment, uniformly alleviates the symptoms of croup, such as the difficult respiration, the barking cough, and the peculiar anxiety of the little patient. It has evidently such an effect upon the diseased surfaces, both those which it actually touches, and those which are continuous, as to induce them to throw off the false membrane by which they are covered, and it appears also to prevent the farther progress of the exudation."

M. Delfix's *Extraordinary Case of enlarged Mammæ.*—"Maria Ahaure, residing in the Lower Pyrenees, 30 years of age, of a lymphatic temperament, consulted him, in the year 1821, for a venereal affection. The use of mercurial frictions soon restored her to health. Two years afterwards, she again consulted the Doctor for a similar disease, and also on account of her breasts, which were enlarged; they were three times their natural size. The liquor of Van Swieten (solution of corrosive sublimate,) was prescribed, which, with other means, produced a diminution of all the syphilitic symptoms, but the mammæ still continued to increase. This augmentation was considered to be a venereal symptom, and mercurial frictions were employed under the arms, until an ounce of the ointment was used; but instead of producing any amendment, the breasts continued to increase in a most extraordinary degree. When the patient was sitting, they rested upon her thighs; they could be joined together behind her back; the nipples were like hen's eggs. The patient, however, experienced no pain, and the skin retained both its suppleness and colour. Unknown to Dr. Delfix, a surgeon had plunged his bistoury deep into this mass, in the expectation of evacuating pus; but only a few drops of blood followed the incision. The patient declared that she scarcely felt this operation. At this period she had miscarried, in the fifth month of her pregnancy.

"Recollecting the good effects of the hydriodate of potass in bronchocele, as well as that it had been found useful in some presumed syphilitic swellings, the Doctor determined upon making trial of it. In consequence, frictions with half an ounce of the pommade, made according to the formulary of M. Magendie, were recommended; emollient fomentations being employed at the same time. No accident occurred; and this treatment was continued for a month and a half. At the end of this time, the breasts were much diminished in size. After an intermission of fifteen days, the pommade was again had recourse to, and employed for three months, the frictions being repeated less frequently, otherwise, the patient complained of headache. The result was, that the breasts were reduced to about twice their natural size: they were flaccid; and the woman was able to undergo severe labour."—*Journal de Physiologie.*

M. Mayer's *Case of Herpes-Exedans.*—The following is an interesting case, and ought to induce our investigation of the powers of black lead on the diseases of the skin:—

"A woman, 29 years of age, who had enjoyed excellent health till her 28th year, was then attacked with rheumatic pains, particularly of the feet; and, after a continuance of four years, the pains disappeared, but were soon succeeded by a red spot over the os naviculare of the right wrist; in a short time this formed a vesicular swelling which was very painful, and lasted without alteration some weeks. The sufferer finally became impatient, and pierced the swelling with a needle, which evacuated some bloody matter, and the part gradually ulcerated. Other vesicles attacked the surrounding parts, and formed ulcerations similar to the first, all of which grew worse, after the application of a pitch and tallow plaster. She applied to a military surgeon for relief, and was by him directed to make use of a reddish ointment, which increased the disease, and caused it to spread over the hand and fore-arm. She then had recourse to a forester, celebrated for wonderful cures; but in this case he failed, and she received no relief from several physicians who attended her afterwards.

On the 19th December, 1822, Dr. Mayer saw her for the first time, and found her complaining of great pain and itching of the hand and fore-arm, over which there were many bad smelling, ugly sores, and bluish cicatrices. New vesicles continued to appear and ulcerate as fast as the older ones healed, and it was impossible to assign any probable cause of the disease, as the patient enjoyed excellent health, and had given birth to several well constituted and healthy children since she laboured under it. The medical gentlemen who had attended her, having made use of all the customary and most active remedies, rendered a recourse to some other mode of practice necessary, and the following prescriptions were adopted:—

℞. Decoct. sarsaparill. ℔j. e radic. ℥ij. in quo solve alumin. crud. ℥ij.

To take a table spoonful four times a day.

℞. Graphit. optim. ℥ss. Sulph. antim. aurat. gr. vj. Mercur. dulc. g. xij. mell. depurat. ℥ss. M.
To take a tea spoonful morning and evening.

℞. Aq. calcar. ust. ol. amygd. dulc, ana ℥j. M.
To use externally.

On the 23d the arm was cleaner, and the pains and itching had diminished considerably. The graphite agreed perfectly with the stomach, but the decoction being unpleasant was discontinued, and the following prescriptions were ordered: —

℞. Graphit, optim. extract. dulcamar. ana j. Mercur. dulc. gr. xij.
Sulph. antim. aurat. gr. vj. Succ. liquerit. q. s. ut fiat. pil. æqual. No. lx.
To take five of the pills three times a day.

℞. Graphit. optim. ʒij. Flor. zinci ʒss. Axung. porc. ℥j. M.
To rub the part morning and evening.

On December 27, there were no more ulcers since the last prescriptions, the old ones were healing gradually, and the medicines were continued.

On January 31, the ulcers were entirely healed, the medicines discontinued, and a camphorated volatile liniment was ordered to be applied to soften the cicatrices. The patient continued well, and was not troubled any more by the disease, although she made free use of the arm in her household occupations.—*Hufeland's Journ.*

VII. MIDWIFERY.

Dr. Ward, of New Jersey, *on the Ergot of Rye.*—As the powers of this medicine over the uterus are unquestionable, we think our readers will appreciate the value of the following directions, by an American practitioner:—

"First. Ergot ought never to be given until the os uteri is completely dilated, excepting in one or two cases, which I shall mention hereafter.

"Secondly. It ought never to be given in cases of impaction, or where there is a disproportion between the head and pelvis. If the head of the child appears to be wedged in the pelvis, so that the natural pains have but little effect on it, and you perceive a soft tumour formed, or forming on the presenting part of the head, although the os uteri may be dilated, the probability is that the child will die before it is expelled, if ergot is given.

"Thirdly. I need scarcely mention that it would be highly improper to give the ergot in all preternatural presentations, excepting breech and footling cases. Should the presentation of the child be such as to

render it necessary to alter its position, it is certain that the uterine relaxation is highly necessary to facilitate the operation.

"Notwithstanding the above precautions, there are some cases in which the ergot may be advantageously used, and, I should think, be a powerful means of saving the life of the parent.

"First. In alarming uterine hæmorrhages, which sometimes take place before delivery, whether it takes place in consequence of a detachment of some portion of the placenta, it being attached to the fundus uteri, or whether it be owing to a separation of its attachment over the orifice of the uterus. In the former of these occurrences, I have no doubt the ergot would be beneficial. The hæmorrhage in this case frequently takes place without pain, and sometimes continues alarming until pains come on, which generally put a period to the discharge. In these alarming cases the life of the mother is principally to be regarded.

"Secondly. The ergot is indicated, and may be given to those females that are subject to hæmorrhage immediately after the expulsion of the placenta. The cause of this hæmorrhage must be a want of contraction in the muscular fibres of the womb, and I think it would be proper to give the ergot a few minutes before the child is expelled.

"Thirdly. In the early stages of pregnancy, when a profuse hæmorrhage comes on and abortion appears to be inevitable, and the ovum is not expelled for want of strong pains, I think the ergot might be advantageously given.

"Fourthly. In restricting the use of ergot in preternatural presentations, I excepted breech and footling cases. Here it is well known to those who are conversant with cases of this kind, that children are sometimes lost in spite of all our efforts to save them, and generally for want of quick and powerful pains after the body of the child is expelled. If the head is retained a few minutes in this situation, with the funis compressed, and the circulation interrupted, the child will be lost, and it is not in our power to extract it without pain, unless the head is small and the pelvis capacious.

"Fifthly. The ergot may be advantageously given in all cases of arrest, where the head of the child has descended into the pelvis, the os uteri is dilated, and the external parts appear to be relaxed, but for want of pains it is not expelled.

"Sixthly. There is another alarming and dreadful disease to which pregnant women are liable, and in which I think ergot may be serviceable. I mean puerperal convulsions, which take place before delivery. I have seen them come on at seven months, and at the full period of nine months, without any preceding symptoms of labour. In both cases the convulsions continued until the women were delivered. In the former case they continued twelve hours, with a convulsion every hour, before any labour pains were perceivable. After that period she was delivered, and had no return of them. In the latter case, the convulsions returned without any pains or dilation of the womb, but not so frequently as in the former case, and continued forty-eight hours. She was then delivered, and although she had no more convulsions, she died

the fourth day afterwards. If the ergot in these dreadful cases will produce uterine contractions, and shorten the disease, it certainly ought to be given.

"Seventhly. Ergot may be given with advantage when the funis umbilicalis descends before the head of the child. This, I believe, is not a frequent occurrence. During a practice of near thirty years, I have never had but six cases. Four of these terminated fatally to the child, in consequence of the funis being too long compressed after the head had descended into the pelvis. The last was saved, I believe, by the administration of ergot. When I discovered the funis before the head of the child, the membranes were ruptured, the pains slow and lingering, and the os uteri nearly dilated. I immediately gave twelve grains of ergot. The pains soon became strong and frequent, and continued so about ten or twelve minutes, when the child was expelled alive. The ergot, I think, ought to be given as soon as the os uteri is fully dilated, that the pains may become strong and frequent, while the head is passing through the pelvis; during which time the circulation in the funis is entirely interrupted, unless the head is very small, and the pelvis capacious. It may not be amiss to observe, that if no pulsation is discovered in the cord, during the examination per vaginam, we may be certain that the child is dead, and must be contented with permitting the labour to proceed, as if the funis had not descended before the head."

Dr. Stevens, of New York, *on a New Instrument for Extracting the Head of the Fœtus.*—"The cutting scissors that are commonly employed for the purpose of making an opening into the head, appear to me to be a very ill-contrived instrument, not well adapted to make a clear cut through the scalp, or to be introduced into the vagina without unnecessarily exposing the mother to injury. I have divided the scalp with a large spear-pointed gum lancet; and in another case, with a scalpel, of which all the edge, except that within half an inch of the point, was covered with a slip of linen wound spirally round it. Either of these instruments may be thus introduced safely and conveniently, upon the fore-finger of the left hand, and made to divide whatever soft parts may cover the presenting bone. If the vertex present, it will be proper, for reasons hereafter to be mentioned, to avoid cutting directly upon it; with this exception, the sutures are the most eligible place for making our incisions, for this obvious reason, that we reach the brain without dividing any other than soft parts. Scarcely any case will occur in which an opening into the head is called for, in which it will not be proper to assist the expulsion of the brain, and advance of the head at least, by the introduction of one or more fingers into the artificial opening thus made. It will often happen, however, that the exhaustion of the patient, or other circumstances, render it necessary or desirable that the head of the child should be diminished without loss of time. In what way may this object be most conveniently effected? Accident suggested to me the use of a hollow cylindrical tube, not unlike

a candle-mould, with a portion of its circumference cut in the direction of its axis, and turned up.

"This instrument is introduced with the greatest ease and safety, and at each introduction will discharge an ounce or more of brain. The simplicity of such an instrument renders unnecessary any explanation of the mode of using it, or its advantages. The contents of the fœtal head may be extracted through one of the orbits of the eye, through the mouth, occipital portion, or vertex, without the slightest injury to the mother. But it sometimes happens, that beside diminishing the fœtal head, it is necessary to exert some degree of traction, in order to its delivery. In what way may such traction be most safely and conveniently made?

"This question Dr. Stevens answers, by directing us to hook the crotchet in the falx of the dura mater; the vertex is steadily maintained in its place, and by twisting the crotchet it is lessened in size, and there is no danger of slipping, of splintering of bone, and no displacing of the head from the axis of the pelvis."

Dr. Stearns' *New Theory of Conception.*—We are never likely, perhaps, to acquire much further knowledge on this mysterious process, and, what advances are made, must be placed to the account of plausible theory. Dr. Stearns' theory consists in the supposition of a vacuum created during coition, by the dilatation of the sides of the womb, which produce, by atmospheric pressure, a union of the semen and ovum in the cavity of that viscus; as it is doubtful, from the experiments of Haighton, whether the Fallopian tube approaches the ovarium for some time after coition; as the laxity of the vagina, also, in many subjects, is wholly incompatible with the idea of a vacuum being formed in the uterus. And as it is doubtful whether the uterus does really enlarge during the orgasm of coition, so as to form a vacuum, the doctrine appears to be without sufficient foundation.

Dr. L. Frank's *Case of Rupture of the Uterus and Cæsarean Operation.*—"Angelica Grossi, aged 44, native of Parma, and the mother of five children, was taken in labour of her sixth child at the beginning of the ninth month of pregnancy, August the 9th, 1817. A midwife was called, who afforded her the necessary help; but as the patient was standing up, she was suddenly seized with vomiting and faintness, and was therefore immediately conveyed to bed by the midwife and attendants. At the instant she was laid on the bed, she felt something give way in the abdomen, and then, to use her own expression, it appeared to her as if there were two children in the womb. Under these circumstances, a surgeon was sent for, who recommended to her rest, as he conceived the sensations of the woman arose from the motions of the fœtus during the act of vomiting. But the midwife, finding that

the abdomen was more and more distended, that the vomiting continued and the breathing was difficult and interrupted, sent for Dr. Joseph Rossi, professor of midwifery. Professor Rossi, on a minute examination, decided that the uterus was ruptured; and after consulting with his father Dr. Francis Rossi, and other practitioners in the town, he, in common with his colleagues, decided that the Cæsarean operation was absolutely indicated in the present case. The operation was performed two hours after the rupture of the uterus is supposed to have taken place, by Professor Cecconi, in the presence of the two Drs. Rossi, Professor Pizetti, and others. The incision was made on the left side of the abdomen, just in the spot where the feet of the child could be felt. After the incision was made, the feet immediately presented themselves to view; and the living child, together with the placenta, were then removed. Forty days after the operation, the patient was perfectly restored, and able to walk out. Her menses some time after this appeared; and in the space of three years from this period, the same woman was delivered of a seven month's child, which lived fourteen days. Over the spot where the incision was made in the abdomen, a cicatrix of the size of an apple remained, which, although it could never be completely healed, caused the patient very little inconvenience."—*Salzburger Medic. Zeitung.*

VIII. MEDICAL JURISPRUDENCE.

Lime Water a Test for Arsenic.—The following process for the detection of arsenic in cases of poisoning, is the joint production of Rose and Berzelius:—"Cut up the coats of the stomach, and place them in the liquid, which is boiled with a few drachms of caustic potash, in order to dissolve any arsenious acid that might be contained in it. The solution obtained is filtered, heated till it boils, and during the boiling mixed with nitric acid, which is added in small portions as long as any thing separates, and till the liquid has become strongly acid, clear, and of a bright yellow colour; it is filtered while hot; afterwards nearly, not completely, saturated with carbonate of potash, and made to boil, in order to expel the carbonic acid; then it is boiled with clear lime-water as long as any precipitate is formed; the lime-water first saturates the excess of acid, and then precipitates with the arsenious acid as arsenite of lime, and with the phosphoric acid and other animal substances decomposed in the nitric acid. If, instead of saturating the acid with lime-water, you add first caustic alkali till the liquid becomes alkaline, and then add lime-water, no precipitate will be formed, because the arsenite of lime is held in solution by the alkali.

"This statement of the solubility of arsenite of lime in a solution of alkali being in contradiction with certain facts, M. Schweigger was induced to examine the circumstances more minutely, and was ultimately led to the following explanatory experiment:—Prepare an

arsenical liquid, pour it into three glasses, and add to one portion an excess of caustic potash: to the second, excess of caustic soda; and to the third, excess of caustic ammonia. On adding lime-water, a deposit of arsenite of lime will be formed equally in each of the glasses. Now add to each a few drops of acid, (for instance, nitric acid,) yet so that in all the alkali shall predominate; whilst no solution of the precipitate will take place in the glasses that have the potash and soda in them, it will immediately begin in that with the ammonia; and all the arsenite of lime will be finally dissolved, although the ammonia be not saturated by the acid which has been added. Of course, the solution will take place in the three glasses when any acid is in excess; yet, on saturating the acid with alkali, the precipitate will be re-formed immediately in those glasses that contain the potash or soda, but not in that which holds the ammonia, however one may neutralize the liquid.

"By putting muriate or nitrate of ammonia into a liquid containing arsenic, and adding lime-water in any quantity, no precipitate will be formed, even though heat be applied. Thus it will be seen, that it is not the ammonia, as caustic alkali, which retains the arsenite of lime in solution, but it is the presence of a soluble salt of ammonia which prevents the formation of the deposit; and if, instead of ammonia, caustic potash or soda be used in the process described by Berzelius, then lime-water will instantly form the precipitate of arsenite of lime."—*Phil. Mag.*

Wounds in Dead Bodies.—There is a circumstance, not in general sufficiently attended to, perhaps, by persons engaged in the study of medical jurisprudence, therefore, a few remarks may be useful: we allude to the appearances produced by injuries inflicted on the dead body, which often very closely resemble the effects of violence committed during life.

Thus we frequently find, in subjects brought into our rooms for dissection, the bones of the head and other parts singularly fractured, or some of the articulations deranged or broken up. Those who are accustomed to these appearances may perhaps be often able to distinguish them, and to say whether they did or did not occur during life; but in general the question is of difficult solution, unless historical evidence can be adduced.

One general rule, however, may be laid down for our guidance in such cases; namely, that almost all serious injuries inflicted on the living body must be attended by an effusion of blood into the surrounding parts—a circumstance which can rarely take place in the dead body, and never perhaps exactly in the same manner.

Another appearance frequently met with in the dead body, and well calculated to mislead, is caused by the simple destruction of the cuticle, either before or after death—the part stripped of this membrane soon drying up in the dead body, and assuming the aspect of a serious injury inflicted during life.—*Phil. Med. Journ.*

IX. MATERIA MEDICA AND PHARMACY.

M. Bally *on the Oil of Euphorbia lathyrus.*—As this is likely to prove a valuable purgative, we may inform our readers that it may now be had in London, of Mr. Noakes (successor to the late Mr. Pope,) 96, Oxford Street. The dose is from ℥iij. to ℥viij. and it has the advantage of being as tasteless as oil of almonds.

"M. Bally, at a late sitting of the Royal Academy of Medicine, gave an account of several experiments made by him, at the Hospital la Pitié, upon the action of this oil. That which he employed had been extracted by means of alcohol, or by expression: this last appeared to be rather more active. Given to fifteen persons of different ages, it produced nearly similar effects; neither did it cause any great number of evacuations. Its purgative power is much inferior to that of the croton tiglium; the dose must be at least doubled, and may be extended from six to ten drops; it has, besides, the defect of exciting vomiting. On the other hand, it does not possess the power of producing salivation, as the croton oil does. M. Bally still, upon the whole, considers it as a useful purgative, and especially for children. It ought to be fresh."—*Archives Génerales.*

Emplastrum Plumbi.—Attempting to form the lead-plaster, the Emplastrum Plumbi of the Pharmacopœia, without the use of water, steam being the source of heat, I was surprised to find, after several hours, during which time the litharge and oil had been kept at a temperature of 220°, or thereabout, and constantly stirred, not the slightest appearance of combination. Upon the addition of a small quantity of boiling water, the oil and oxide immediately saponified: water appeared, therefore, to be essential to the formation of the plaster. It also appeared probable the oxide might be in the state of hydrate. To ascertain if such were the case, I precipitated, by potash, the oxide from a quantity of acetate. The precipitate, when washed, was dried by a heat of 220°, until it ceased to lose weight. One hundred grains, heated to redness in a tube, gave off nearly eight grains of water assuming the orange-colour of litharge. The recently precipitated oxide was, no doubt, therefore an hydrate; part of which, with somewhat less than two parts of olive oil, without any addition of water, at a temperature of 212°, formed in half an hour a perfect plaster. Each of these experiments has been repeated with precisely the same results. I am induced to mention this fact, because all pharmaceutical writers limit the action of the water to that of keeping down the temperature.—H. H. *(Journal of Science.)*

Mr. Carpenter, of Philadelphia, *on the Varieties and Tests of Cinchona Bark.*—"As there is no method so well calculated to ascertain the comparative activity of the different species of Peruvian bark as that of analysis, I have thought proper to make trial of

the most important species which now occur in our commerce, by extracting the alkaline principle upon which its virtue as a medicine entirely depends, and upon the product of which the comparative strength may be accurately ascertained.

"It is greatly to be regretted, that many of our country practitioners so little appreciate the quality of bark, but are entirely governed by the price, which, from the following statement, will appear to be the most erroneous calculation; for it not only requires the patient to swallow twelve times the quantity equally nauseous to produce the same effect, but also, by the introduction of so large a portion of ligneous and insoluble matter into the stomach, lays the foundation of diseases more to be dreaded than those for which it was administered as a remedy."

Calisaya Bark.—Of this very superior species of Peruvian bark there are two varieties in commerce:—

"1st. *Calisaya Arrollenda.*—This variety is in quills from three-quarters of an inch to an inch and a half in diameter, and from eight inches to a foot and a half in length. The epidermis is grey and whitish on the exterior, and of a reddish brown beneath. The peculiar features of this bark, and by which it may be readily distinguished, are the following. The epidermis is thick and may be easily removed from the bark hence you find in the seroons, in which it generally comes, the greatest part deprived of this inert portion. It has many deep transverse fissures running parallel; the fracture is woody and shining; the interior layer is fibrous, and of a yellow colour; the taste is slightly astringent, and very bitter.

"This species of bark will yield a much larger proportion of quinine than any other bark in commerce, and consequently may be justly esteemed the best.

"2d. *Calisaya Plancha*, or *Flat Calisaya.*—This variety consists of flat, thick, woody pieces, of a reddish brown colour, deprived of the epidermis, and interior layer more fibrous than in the quill. This variety yields from twenty to twenty-five per cent. less quinine (or active principle,) than the former, and consequently is a less desirable article.

"*Superior Loxa or Crown Bark.*—Loxa is the name of the province and port of Peru where this bark is obtained, and from whence it is exported. It was in this province cinchona was originally discovered. This bark is highly esteemed by the royal family, and is that species which has been selected for their use; hence the name of crown-bark. This bark is in small quills, the longitudinal edges folding in upon themselves, forming a tube about the circumference of a goose quill, and from half a foot to a foot and more in length. It is of a greyish colour on the exterior, covered with small transverse fissures or cracks; the internal surface is smooth, and of an orange red; it is of a compact texture, and breaks with a short clear fracture; it is known at Loxa by the name of cascarilla fina. Notwithstanding this bark appears to have had the decided preference to all other species, yet analysis fully indicates that it is not equal in medical strength to the calisaya.

"This species yields from twenty-five to thirty per cent. less quinine than the former, the crystals of which are not so well characterized.

"Experiments which I made upon the Carthagena bark, of rather better quality than the market generally produces, yielded about one-twelfth the quantity of the calisaya arrollenda.

Remarks.—When the calisaya bark was first introduced here, it was considered an inferior article, and would not bring its cost in South America; but such was the deception of external characters, that when quinine began to be manufactured in this city, and it submitted to the infallible test of experiment, it was proved to be the best.

After having found the best species of Peruvian bark by the several distinguishing and specific characters, one very important adventitious character yet remains to be investigated. It is a fact established beyond controversy, that age is a very powerful agent in deteriorating the active properties of bark, insomuch that the best species of Peruvian bark, when old, is little superior, and sometimes even inferior to Carthagena bark when fresh; hence it is that large parcels of a superior species of Peruvian bark, which would have commanded at least two dollars per pound at Cadiz when fresh, has been offered publicly in this city for twenty-five cents per pound, and that without a purchaser, and which it appears has been operated upon by no other unfavourable agent but age. In what manner or by what process age, or rather the circumstances connected with age, acts upon bark, other than an oxidisement or volatilization of its active principle, I know not. Fabroni states, that cinchona loses its solubility, and consequently its activity, by long exposure to the air, but does not give his opinion as to the manner in which it is thus affected. I cannot however conceive, under existing circumstances, how the solubility of Peruvian bark can be diminished, except through the agency of oxygen; and it is by this means the extract of bark, prepared according to the common formulæ of our dispensatories, are devoid of utility; for, owing to the oxidisement of the extractive matter, the solubility of the extract is so diminished during its formation, that scarcely one half is soluble in water.

From a number of experiments which I have made upon Peruvian bark in different states, I have observed as an unequivocal result, that the same species of bark, which when fresh, is very productive of quinine, when old, will produce little or none of that active principle, upon which its virtue as a medicine depends.

It will appear therefore an important duty, critically, to examine the state of bark as to its age; and it would perhaps be useful in this place to describe the physical characters of bark in this state. The prominent features which characterize old bark, and distinguish it from recent, are the following; old bark has lost that bitter and astringent taste and peculiar aromatic odour which are such prominent characteristics of recent bark of good quality. The specific gravity is also sensibly diminished, and the fracture, instead of being shining and compact, is dull, fibrous, and of a loose texture, and the colour very frequently passes from a bright orange to a dull brown, as the bark advances in age. By attention to these few conspicuous characters, taste, smell, specific gravity, fracture and colour, no mistake can arise

in the selection of good bark, unless there is a gross deficiency of judgment. Yet notwithstanding the distinguishing characters of Peruvian bark in these two states are so prominent and striking, we regret to say, that gross mistakes have publicly been made in this particular, and by men, whom we might suppose most capable of appreciating the quality under the influences of every incidental circumstance.

X. CHEMISTRY.

Cystic Oxide Calculus.—The occurrence of the cystic oxide calculus appears to be more common than was at first supposed. Our readers will remember, that this substance was first noticed by Dr. Wollaston, who published his description of it in the Philosophical Transactions for 1810. He had seen at that time only two instances of it; but several cases have since been met with, from which it is probable, that they will more frequently be found whenever they shall more generally be looked for.

The three cases mentioned by the late Dr. Marcet, in his Treatise on Calculi, as having fallen under his own observation, are interesting and instructive. They show that the formation of cystic oxide, contrary to the supposition from which its name was derived, may take place in the kidneys. For, in one of the cases, the descent of a stone from the kidney to the bladder was distinctly indicated by the symptoms; and, in the two others, cystic oxide calculi were actually found in the kidney after death. The formation of cystic oxide, according to Dr. Marcet, is usually connected with renal disorders; and he conceived that these calculi were peculiar to the kidney rather than to the bladder. Two of Dr. Marcet's cases occurred in brothers; whence it seems probable that the cystic oxide diathesis may be of an hereditary nature.

We have made these observations as preliminary to the history of a case, the first part of which is already before the public. We allude to the following letter from Professor Stromeyer to Mr. Noehden on the subject of cystic oxide, published in the eighth volume of the Annals of Philosophy, New Series. He states, that "he had some time ago the great satisfaction of discovering in gravel from the human body Dr. Wollaston's cystic oxide; and afterwards, in the urine of the same patient, who is afflicted with the stone, the same substance in a considerable quantity. In this urine, the uric acid was almost totally wanting, nor was the urea found in it in natural quantity. As the cystic oxide has hitherto not been found in any human concretions any where but in England, and has as yet been no where observed in the urine itself. I wish you, if you should see Dr. Wollaston, to mention this to him, at the same time respectfully remembering me to him. I have no doubt this intelligence will interest him. I mean shortly to publish a brief notice upon the subject. Last year M. Lassaigne, of Paris, also found cystic oxide in a stone from the bladder of a dog."

We are happy in being able to give the following particulars relative to this case, which we state on the authority of Dr. Turner, who has lately received an account of it from Professor Stromeyer. In con-

sequence of suffering from symptoms of stone in the bladder, the gentleman above alluded to submitted to the operation of lithotomy, and three cystic oxide calculi were extracted. It is remarkable that a sister of this gentleman has likewise been subject to a similar complaint, having once passed a stone by the urethra, which proves, on examination, to be cystic oxide.

This is one of the most instructive instances of cystic oxide hitherto published. We here detect Nature in the act of forming the calculus; the cystic oxide is found copiously in the urine itself, it is deposited in the form of gravel, and ultimately gives rise to a regular stone. It is most probable that the formation of such calculi is always preceded by the presence of cystic oxide in the urine itself; and we should expect from this circumstance, that the deposition may take place in any part of the urinary passages. In the present case, the calculi seem to have been formed in the bladder. The tendency of this disease to attack more than one member of a family, noticed by Dr. Marcet, is also confirmed.

Is cystic oxide foreign to healthy urine, or does it exist in it naturally in small quantities? We are not aware that the urine has been examined with the view of deciding this point, or that the question itself has been distinctly stated. From the difficulty of separating animal principles from complex animal fluids, it is obvious that a substance like cystic oxide, which is held in solution by so many re-agents, may easily have been overlooked. —*Ed. Journ.*

XI. BOTANY.

Dr. Hubble *on the Prenanthes Altissima.*—"My attention has been directed to a plant, which is universally believed by the inhabitants of certain sections of our country to possess the power of eliminating or counteracting the virus produced by the bite of the rattlesnake (*crotalus horridus* of Lin.) This plant I have found to be the *prenanthes altissima* of Linnæus. It is called by the common people snake-weed, which name it has probably received from its reputed virtues in curing the bite of that animal. I shall content myself with merely giving a botanical description of the plant, and stating some facts in reference to its medicinal properties, leaving its further investigation to those who may have an opportunity of assaying it by the touchstone of well conducted experiments.

"The prenanthes altissima is a perennial syngenesious plant, of the order polygamia æqualis.

"*Generic character.*—Calyx calycled, cylindric; receptacle naked, egret simple, flowers from five to twenty, ligulate.

"*Specific character.*—Stem herbaceous, simple, a little spotted, racemes axillary, flowers pendulous, calyx about five-flowered; leaves decurrent on the petiole, angled, denticulate, margin scabrous, radical and lower cauline ones deltoid, with the two lobes at the base projecting a little backwards, middle and upper cauline ones ovate. The flowers are yellowish, and appear in September. The whole plant is lactescent,

growing to the height of three or four feet, in a damp and shady soil, mostly along rivulets.

"The following, among many other cases that might be adduced, are submitted as proofs of its medicinal efficacy:—

"G. W. S., aged about 14, was bitten by a rattlesnake under the malleolus externus. As the prenanthes could not be immediately obtained, the most excruciating pain, with great swelling and discolouration supervened, attended with nausea, vomiting of bilious matter, and remarkable prostration of strength. By an external and internal administration of the prenanthes, relief was promptly obtained, with a subsidence of the pain, tumefaction, and discolouration.

"J. R., aged about 25, on making an attempt to draw a rattlesnake from a stone wall, was bitten on the outside of the hand, between the thumb and fore-finger. The usual symptoms attending the bite of this venomous reptile began to arise, but were immediately arrested by an opportune application of the prenanthes, applied externally to the wound, and given internally in the form of a strong infusion."

XII. MISCELLANEOUS.

Royal Medical Hall, Edinburgh, Nov. 22, 1825.

Sir—You will confer a favour on the Royal Medical Society of Edinburgh, by inserting in your publication the following paragraph:—

The Royal Medical Society of Edinburgh propose as the subject of their Prize Essay, the following questions.

1st, What is the respective agency of the veins, and of the lymphatics in the process of absorption?

2d, By what means or mechanism do these vessels accomplish this process? What are the proofs which shew that the substances absorbed are taken up by open mouths or orifices, or pass through the coats in the manner of imbibition or transudation?

3d Is there any reason to believe that the individual animal tissue possess, a distinct power of absorption, or that this process is influenced by the nature of the animal tissues?

The sum of twenty guineas, a medal, or a set of books of that value, will be given to the author of the best Dissertation on the subject proposed by the Society, for which all men of science are invited to compete.

The Dissertations may be written in English, French, or Latin, and must be transmitted to the Secretary on or before the 1st of December, 1826, and the Adjudication of the Prize will take place in the last week of the month February following.

To each Dissertation must be prefixed a Motto, which must likewise be written on the outside of a Sealed Packet, containing the name and address of the Author.—No Dissertation will be received with the Author's name affixed; and all Dissertations except the successful one will be returned, if desired, with the sealed packet unopened.

NICOLSON BAIN, Secretary.

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BOOKS RECEIVED FOR REVIEW,

DURING THE LAST QUARTER.

[N. B. Only those Books sent gratis and free of expense, can be entered on this List.]

Observations on the Efficacy of White Mustard Seed, in Affections of the Liver, Internal Organs and Nervous System; and on the General Management of Health and Life, by Charles Turner Cooke, consulting and operating Surgeon, Cheltenham, 8vo, pp. 120.

An Account of the Morbid appearances exhibited on Dissection, in various Disorders of the Brain; with Pathological Observations, to which a comparison of the Symptoms with the Morbid Changes has given rise, by Thomas Mills, M.D. 8vo. pp. 240.

The Book of Nature, by John Mason Good, M.D. F.R.S. F.R.S.L. &c. 3 vols. 8vo.

An Enquiry concerning that disturbed State of the Vital Functions, usuallydenominated Constitutional Irritation, by Benjamin Travers F.R.S.Senior Surgeon to St. Thomas's Hospital, &c. &c. 8vo. pp. 556

Experimental Researches on the influence exercised by Atmospheric Pressure upon the Progression of the Blood in the Veins, upon that function called Absorption, and upon the Prevention and cure of the Symptoms caused by the Bites of Rabid or Venomous Animals, with an Appendix containing the Original Reports of Baron Cuvier, and of Professors Dumerit and Laennec to the Royal Institute of France, and to the Royal Academy of Medicine of Paris, &c. &c. by David Barry, M.D. &c. &c. 8vo. pp. 175.

LIST OF BOOKS.

An Essay on Headaches, and on their Cure, by W. Vaughan, M.D 8vo. pp. 320.

Bulletin des Sciences Medicales, par M. Le Baron Feruss, &c. [*In exchange.*]

Medico-Chirurgical Review, by Dr. James Johnson. [*In exchange.*]

Revue Médicale. Various Numbers.

Practical Observations on the Convulsions of Infants, by John North, Surgeon-Accoucheur, M.R.C., pp. 282. 8vo.

A Treatise on Diet with a view to establish, on practical grounds, a System of Rules, for the Prevention and Cure of the Diseases incident to a Disordered State of the Digestive Functions, by J. A. Paris, M.D., F.R.S. &c. &c. pp. 307.

[This Work appears to be very common-place, though, like all Dr. Paris's works, it is well written. We shall analyse it in our next.].

ANDERSON'S

QUARTERLY JOURNAL

OF

Medicine and Surgery.

Nº. III. JULY, 1826. Vol. III.

Art. I.—*Histoire des Progres recens de la Chirurgie.* Par M. Le Chevalier Richerand. 8vo. pp. 360. à Paris, 1825.

A Sketch of the progress of surgery for the last thirty or forty years, from the pen of the celebrated French surgeon, M. Richerand, cannot fail of being interesting to practitioners of surgery in general, and more particularly to those of Britain, on account of the high panegyric he has bestowed on British surgery; a panegyric which seems to have given offence to some of his weaker brethren of the French metropolis. The sketch embraces the period which elapsed from the suppression of the old to the erection of the new French academy of surgery; a period in which the science must be allowed, whatever some splenetic beings may allege, to have made immense progress.

Trepan.—An academy of surgery, according to M. Richerand, has not for its principal object the making actual improvements in surgery, but rather the examination of inventions and discoveries, in order to ascertain their real value, and give authority to their adoption. At any rate, this seems to have been the course pursued by the old academy. Hence, the operation of the trepan occupied the attention of that learned body almost exclusively in their first transactions, "as if, says M. Richerand, "they wished to dignify their profession by directing all their powers to the head, at a time when Chirac, who then wielded the sceptre of medicine in Paris, was turning the eyes of the medical faculty to the excrement." An operation (the trepan) then so much in vogue is now almost fallen into disuse; for there are but few cases in which it is absolutely necessary.—"Indeed, says

M. Richerand, the labours of several pupils of the medical school of Paris, regarding the mechanism by which effusions formed in the substance of the brain are gradually absorbed, must render the operation of the trepan, now so rare, still less frequent."—In former times these resources of nature were unknown.

"There are cases, however," says our author, "though fortunately few in number, where the operation of the trepan cannot be dispensed with; and MM. Beclard and P. Dubois have made known to us one of these cases where the trepan was employed with great advantage. It was a wound on the right temple, without any apparent fracture; the left half of the body had become paralytic, and there was every symptom of effusion: three trepan-crowns were applied at the upper part of the temporal fossa, formed by the parietal bone, and by their means not only a fracture was discovered, but a considerable effusion resulting from an injury done to the middle artery of the dura mater; a thread of arterial blood was seen escaping from the vessel, and running over a large dark clot. About eight ounces of coagulated blood was extracted through the openings; and the operation was attended with the most complete success. This rare and valuable case gives an example of the successful application of the trepan upon the temporal region, which our predecessors, with unnecessary caution, had enjoined us to reject. It proves, likewise, that even in the absence of sensible signs, the operation may be decided on; for in the above cases these signs were wanting; and yet the application of the trepan confirmed the correctness of that diagnosis which the sagacity of those experienced surgeons had established." pp. 19.

Fistula Lacrymalis.—Since the time of J. L. Petit, little improvement has been made in the treatment of fistula lacrymalis. M. Richerand prefers the mode of operating with the canula of Foubert, not only on account of its simplicity and easy execution, but because it renders unnecessary the tedious and painful dressings required by a progressive dilatation, and relapses are not more frequent here than after other processes. He disapproves of Scarpa's mode of perforating the os unguis by means of the actual cautery.

Cataract.—Neither has any real improvement been made in the operation for cataract; all on that subject being in a state of anarchy and confusion, some contending stoutly for couching, and others for extraction. It must be allowed, however, that in many instances couching is the only mode applicable, while extraction is altogether inadmissible. The latter had its birth in France, where, for a time, it was almost unanimously eulogized; and it even spread over a great part of Europe, notwithstanding the opposition of Pott and others, till the celebrated Scarpa declared himself the exclusive partisan of couching.

"Under the eyes of the academy of surgery," says M. Richerand,

"a certain number of patients should be assembled in a convenient situation, and then operated upon comparatively, according to the two methods, the individuals subjected to the operation being placed as much as possible in the same circumstances. Such an experiment can only be undertaken and executed with advantage by an academic body, who have no other interest in view but that of truth. Even a surgeon of the greatest skill, though, in the exercise of his profession, he seeks after truth with the most ingenuous candour, cannot defend himself from a host of prejudices, of the existence and power of which he himself is often ignorant." p. 27.

The author condemns the *keratonyxis* or puncture of the transparent cornea, made with the intention of displacing or breaking down the crystalline.

"It has met with no favourers out of Germany; the trials made of it have shown that it is more frequently attended with accidents, the consequence of inflammation, than the usual processes; and when these accidents do not occasion the total loss of vision, they threaten with opacity, or actually render opake a part, the transparency of which it is of so much importance to preserve entire." p. 31.

Perforation of the Tympanum.—Perforation of the tympanum will be of use when the deafness depends upon the thickness of that membrane, or upon obstruction of the Eustachian tube; and when no benefit, as is frequently the case, ensues from the operation, we may conclude that the cause of deafness has been mistaken. Fortunately, the operation is attended with no pain or risk.

Rhinoplasma.—The process for forming an artificial nose is too well known to need description here. Most patients, in M. Richerand's opinion, would prefer to the Indian method a nose of pasteboard, made as like to the natural nose as possible. But it is only when the member has been lost by accident, as by the blow of a sabre, that the operation should be attempted; it will always fail when the parts are in an unhealthy state.

Salivary Fistula.—With regard to the salivary fistula of the cheek, the author observes, that they have never been cured with so much certainty and expedition as by the establishment of an internal fistula, or real artificial passage, kept open by the presence of a foreign dilating body. MM. Deguise and Beclard have improved upon this ancient practice, and in many instances with complete success.

Staphylloraphia.—Certain individuals, it is well known, are born with the veil of the palate cleft; and this malformation, in which the uvula is bifid, though it is not so common as the hare lip, is by no means rare.

"The late experiments of physiologists," says our author, "have shewn, that the animal machine, instead of being formed, so to speak,

by a single effort, is constituted progressively, and becomes organized, as it were, piecemeal. The bowels or organs exist before the sides of the cavities destined to contain them; the formative action begins with the lateral parts, and ends at the median line, the two halves of the body becoming united at the moment when the organization is complete. So the greater number of congenital deformities are found at this point, and depend upon the formative action being incomplete. It is owing to this that the upper lip, the roof of the palate, the veil of the palate, and the uvula, are so often bifid, and that art is called in to terminate the imperfect work of nature. It is chiefly with the view of enabling patients to articulate distinctly that attempts have been made to remedy the congenite division of the palatine veil. The deglutition of solid or liquid food, though difficult, is still possible; but as the individual is incapable of pronouncing an articulate and intelligible sound, he is reduced to the condition of a brute." pp. 40, 41.

To remedy this defect, M. Gräfe, a German professor, contrived certain instruments in 1816; and something similar was published in France in 1819, by M. Roux, of Paris, *possibly* without knowing the invention of M. Gräfe.

Bronchotomy.—"The extraction," says M. Richerand, "of foreign bodies which have got into the windpipe, has become an easy and safe operation, since the section of the cricoid cartilage, and of the two or three first rings of the trachea, has been substituted for the painful incision of the trachea near the lower part of the neck. When bronchotomy is practised according to this process, it is always easy to determine the exact place where the point of the bistoury should be introduced. It is the spot immediately under the jutting point or prominence of the larynx, at the middle and anterior part of the neck, in the interval betwixt the thyroid and cricoid cartilages; and it is known by the want of resistance and by the depression which is made upon the *crico-thyroidean* membrane, when the point of the forefinger is placed upon it. It is an easy matter to make this examination, even in persons who have a considerable degree of corpulence. The point of the instrument, the cutting edge of which is directed downwards and forwards, penetrates three or four lines into the canal, which is then divided from above downwards to the extent of about fifteen lines. This opening is sufficient to permit the exit of a French bean, or any foreign body of a like size; and as it comprehends merely the skin, the *crico-thyroidean* membrane, the cricoid cartilage, and the four or five first rings of the trachea, the wound is not deep. It corresponds exactly with the cellular median line, which separates the two symmetrical halves of the neck, and consequently it touches the thyroid gland in no part but at the strait and thin isthmus which unites its two lobes, a portion of the gland where there are only

very small arteries, by means of which the thyroid arteries of one side communicate with those of the other." pp. 41-3.

Wounds of the Chest.—In penetrating wounds of the chest, M. Richerand joins in opinion with M. Larrey, that they should be closed immediately, even when they are complicated with hæmorrhage and effusion; and he expresses surprize that this should have been lost sight of in the case of the Duc de Berri.

Invagination of the Intestines.—The grand obstacle to the re-union of a divided intestine by invagination, is the discrepancy of the two textures put in contact, a serous and mucous membrane.

"It results," says our author, "from a series of experiments and researches which M. Joubert has submitted to the academy, and which its commissioners have verified; that if invagination be practised, and care taken previously to fold within itself the lower end, so that the upper end being introduced into it, its external or peritoneal coat becomes in contact with the analagous membrane of the lower end, adhesion takes place with ease betwixt textures of the same nature." p.49.

M. Richerand takes the merit of having first pointed out the absurdity of pretending to unite membranes so different as the mucous and serous tunics of the intestinal canal. The mode adopted by M. Joubert removes the obstacle, and it was attended with complete success on dogs. At the point of junction, there is merely a thickening of the parietes, a sort of flat valve which presents no resistance to the free and easy passage of the fæces.

Herniary Bandages.—We cannot resist transcribing what our author has said upon herniary bandages or trusses, especially as the subject seems to have occupied the attention of the academy.

"It seems now," he says, "to be generally acknowledged that the bandage best adapted for the support of inguinal and crural herniæ, consists of a perfectly elastic curve, an iron or steel spring, a lever of the third order, at one of the extremities of which the resistance is placed: The resisting extremity is surmounted by a ball or cushion, while the opposite extremity rests lightly upon the convexity of the sacrum, and the curve embraces the haunch of the affected side, to the circumference of which it ought to be exactly fitted, and upon which it should be, as it were, moulded. For this purpose, the steel of the bandage should possess a just medium betwixt inflexibility and suppleness, and the bandage itself should be made, if possible, exactly to the measure of the patient. The oval cushion should have a double obliquity, so that its posterior surface, looking both forwards and backwards, may support the weight of the abdominal bowels, which hang in the opposite direction. This ball, firmly united to one end of the bandage, makes a part of it, and consequently opposes an invariable resistance to the efforts continually made by the bowels against the weakened point of the abdominal *parietes.* Were the ball moveable,

it would be a serious defect; and here we cannot sufficiently stigmatize those bandages, called *English trusses*, which have a moveable ball at each end, and which consequently are so dangerous, that a vigilant police should prevent their sale and forbid their use. Susceptible, in consequence of the perfect elasticity of the metallic curve of which it forms a part, of suiting itself to the different states of the abdomen, the ball will compress the herniary opening more effectually by means of a cushion fixed to it, than if we should cover it with a bladder full of air, or place a spring within it, as was formerly done by Juville, the most dextrous of our bandage-makers. A bandage with a double ball is essentially defective, because, being destined to confine two herniæ, it acts but upon one opening, that covered by the ball placed at the extremity of the curve. In the case of a double herniæ, we ought always to prefer a double bandage." pp. 54, 55.

M. Richerand goes on to mention other bandages or trusses of more complicated machinery, which he entirely disapproves of; particularly condemning such bandages as have a ball, with a smaller ball connected to it, meant, as is pretended, to be fixed to the herniary opening, so as to shut more hermetically. Balls of this sort, as he very justly observes, are more like to eternize the disease than cure it.

If M. Richerand has thought fit to offer these and similar observations to an academy of surgeons, surely we shall not incur blame in having presented them to our readers, though they may not appear under a very novel aspect.

Division of the Stricture in Hernia.—"The enlargement of the opening that gives passage to the abdominal bowels forming a hernia, is almost always necessary where, in order to return them, we are obliged to open the herniary sac. This delicate part of the operation is named the division of the stricture (debridement), and is at present performed with instruments so admirably constructed, as to add much to the easy execution, and above all to the safety of the operation."—Bienaise, Mery, and J. L. Petit made successful improvements on the bistoury used for this purpose.—"In the sequel, says M. Richerand, a simple probe-pointed bistoury was made use of, which, having been gradually improved, has at length received from our respectable master, Professor Dubois, the most convenient form. This instrument, called Cooper's bistoury, because in reality Sir Astley Cooper first gave a drawing and description of it in his work upon hernia, is a long curved knife, the cutting concavity of which cuts but about the length of three lines, at a small distance from its point, terminated by a small olive-shaped button. This small portion is all that is requisite for dividing the stricture, while the rest of the concave edge, which is quite blunt, may be carried without fear among the bowels that form the

hernia. A recent case gave me an opportunity of proving the excellence of the herniary bistoury. In the month of February, 1824, I was sent for by Madame V. to give her my assistance in a case of strangulated and irreducible crural hernia. The tumour, though not large, was, as it were, buried in fat; and through this it was necessary to cut about two inches and a half before reaching the herniary sac, in which a turn of the intestine was shut up. Without the curved bistoury it would have been almost impossible to divide the stricture without danger, in the bottom of a wound not so long as it was deep; yet even in this kind of well I found it quite easy to conduct the bistoury and divide the stricture." pp. 59, 60.

This point should be attended to; that the enlargement of the herniary opening is not the result of a real incision; scarcely are a few fibres of the aponeurosis cut, when the fibrous texture gives way, and the division takes place almost spontaneously. This in a great measure prevents hæmorrhage, which indeed hardly ever happens, unless the surgeon, in dividing the stricture, cuts as if he were opening an abscess.

Fistula in Ano.—It was once thought, that the internal orifice of fistula might be about five or six inches from the anus; whereas it is seldom more than eight or twelve lines; hence the cure of this kind of fistula has become extremely simple, and the instruments so long imagined to be requisite have become obsolete.

"In vain," says our author, "Sabatier taught and proved that a simple grooved flexible staff was sufficient for the operation of the fistula. Practising his art in an hospital remote from the centre of the metropolis, and a modest enemy of every kind of quackery, his voice was scarcely heard, whilst Dessault, surrounded by a numerous auditory, and placed upon a more favourable stage, diffused his errors among the deluded multitude; lamentable errors, which have survived their author, and of which we ourselves have been too long the dupe and the echo." p. 66.

The operation for fistula, however, even in its simplest state, is not always followed by a cure. This may be occasioned by constitutional infirmity, or by immethodical dressings; for, in the latter case, if the charpie introduced into the wound after the operation, be laid aside before the wound be healed, the original disease will very probably be reproduced.

Strictures of the Urethra.—Here Dessault, who seems to be no favourite of our author, is attacked for his having introduced and so highly commended bougies of elastic gum, the bad effects of which M. Richerand has been at some pains to represent: he is an advocate for the plaster bougies of Daran.

"Like those," he says, "of elastic gum, the action of plaster bougies

is quite mechanical; but the dilatation which they effect is more gradual, more gentle, and is not likely to occasion laceration of the canal, or the formation of wrong passages. Already soft and flexible, they become still more soft and pliable by the heat of the place into which they have been put; in this state they insinuate themselves into the contracted portion of the urethra, moulding themselves, as it were, upon it, so that in time even the most considerable obstructions may be removed by their means. However, the tediousness of the treatment has made several surgeons neglect their use; and has frightened away most patients, blind partisans of the most expeditious method." pp.70,71.

Of these the principal is the employment of caustics. This is not a yesterday practice. Henry IV. of France, was cured of stricture by the application of caustic, though employed after a defective method. It is hardly necessary to point out the dangers which attend the caustic; when the stricture is in the membranous part of the urethra, that part may be perforated; and when near the bulb a severe hæmorrhage may ensue. It is only when the stricture is at the spongy part of the canal that the caustic can be advantageously applied.

Urinary Calculi, Lithontriptics, Lithotomy.—The recoveries after the operation of lithotomy are so few in number, that lithontriptics have been every where sought after with the greatest zeal; but in vain. Even chemistry has been able to do nothing.

"M. Jules Cloquet, reflecting," says M. Richerand, "on the nature of those causes which render chemical lithontriptics inefficacious or dangerous, fortunately thought of substituting for them solvents, which act entirely by means of their physical properties; and of these he found distilled water to be the best. Possessed of no irritating quality, distilled water, when its temperature is at 30° of Reaumur, acts in process of time upon the hardest calculi, whatever be their composition, and gradually wears away their surface; so that there is no substance but must yield to this really universal solvent." pp. 77, 78.

We regret that our limits will not permit us to describe the process by which the distilled water is made to pass in a continued stream to and from the bladder. It acts, however, with extreme slowness, and this without doubt is its principal inconvenience.

With regard to the influence of a double electric current on the calculus, as proposed by MM. Prevost and Dumas, our author is doubtful if the organs could support either the frequent introduction of the apparatus, or such a prolonged electrisation as would be necessary.

M. Richerand has considered at some length the various methods of performing the operation of lithotomy. In spite of every improvement, he has shewn that it must always remain a

perilous operation, and one which it would be well if we could render unnecessary. The method by dilatation, practised of old by the Egyptians, has been revived of late years; and by this means instruments have been introduced into the male bladder capable of breaking down small stones; but it is an operation of no easy execution: on the contrary, the female urethra may be very easily dilated. The file has also been used, in one instance at least, successfully.

We have not room to describe the process and the instruments employed by M. Civiale for breaking down calculi; but our author assures us that about thirty patients have undergone the process, and that most of them were cured. In none of them did the instruments need to be introduced more than six times. It is a process, however, that is not suited to every kind of urinary concretion seated in the bladder; and even the preparatory dilatation of the urethra is in some instances very difficult, and almost impossible, where the passage is naturally or accidentally very strait. Another objection also to the process is, that one or two fragments may remain in the bladder, and become nuclei for other calculi.

Although M. Civiale's method will not do in every case, his exertions are not the less deserving of great praise; and our author thinks that in time it will be very generally employed.

This part of the subject is terminated by some remarks on the apparent plagiarisms of physicians and surgeons, in all that concerns calculus of the bladder; in which it would seem that M. Dupuytren is ranked among the first characters of the age; "an age," says M. Richerand, "which a great poet, Lord Byron, has characterised with as much truth as energy, by calling it the age of hypocrisy and falsehood."

Radical Cure of Hydrocele.—We shall give nearly the whole of this article in the author's own words.

"The careful study," he observes, "of the mechanism by which nature effects the union of irritated surfaces, after the operation of hydrocele by injection, lays open to us a subject of intense interest.—Tracing the phenomena with attention, we see the liquid which is the new product of irritation, and which concretes spontaneously—we see the liquid, I say, become solid, and then pass gradually into the state of an organized and living body, so that the matter evidently undergoes a series of transformations. When I first began to practice (in 1800), the evident and rapid formation of a new effusion, after the operation for hydrocele by injection, made me dread the recurrence of the disease, the cure of which, according to the ideas then in vogue, ought to have resulted from the inflammatory tumefaction of the tunica vaginalis and of the testicle. Experience, however, soon divested me of my fears, and I saw that this new effusion gradually disappeared, in

proportion as the inflammation which occasioned it abated, and I discovered that the respective adherence of the surfaces was not *immediate*, but was produced by means of an interposed layer of albumen."

"But how does this albumen, after becoming solid by concretion, pass into a state of organization and life? and what are the successive changes that take place in its interior? We have learnt this from recent observations. Small vacuities are established in the substance rendered solid, and are disposed regularly one after another, as is seen on the surface of boiling milk, where the bubbles of air, which are disengaged and reach the surface, are disposed in symmetrical lines. In a short time these areolæ open into one another, and by means of these communications form vessels, which at first have some analogy with the dorsal artery of certain insects. A kind of vascular system, proper to the newly-formed membrane, is organized in its substance (apaisseur); it is composed of a principal or central vessel, from the extremities of which branches are sent off, directed on each side to the two surfaces which are to be united by the new texture. This vessel, which may be injected in the substance of certain membranous septa formed in the abdomen, has a resemblance to the system of the ventral vena portæ; for in a similar manner it represents a tree, the branches of which are directed towards one of the two surfaces, while its roots are carried to the other, and at length they are identified with the primitive textures, when by means of multiplied divisions and subdivisions they are reduced on each side to the state of capillaries. It is by this uniform and admirable mechanism that these false membranes are formed, organized, and vivified, which produce adhesion in the contiguous surfaces of serous textures affected with a certain degree of irritation."

"The attentive observation of the successive changes which the new texture undergoes in passing to a state from fluidity to that of a living solid, shews to us, then, matter at first inert, acquiring gradually all the properties of life. In place of a simple serum, irritation substitutes a plastic and spontaneously concreting lymph; in a short time organization is established in this concreted substance, at first cellular and then vascular, so that the living process is at length completed there, in the same manner as in primitive organization. It was, we are told, by reflecting on the fall of an apple, that the immortal Newton discovered the mechanism of the universe: Thus light will perhaps be thrown upon the primordial laws of organization and life; by studying in all its circumstances the fact of the organization of new textures."

"We have already sufficient grounds for the preference given so generally to the process by injection in the radical cure of hydrocele. No other is comparable to it for efficacy, and no other is so easily executed or attended with so little pain. The first idea of this mode of cure in hydrocele came to us from that country where nothing impedes human industry; a country of which the inhabitants, in an ungenial clime, are possessed, perhaps, of a taste less delicate, of feelings less lively, of an imagination less ardent, than those of regions nearer the

Equator; but who possess and cultivate in preference the noblest faculties of our being; a country, the people of which are eminently rational, and with whom the feelings, the memory, and even the imagination, are always curbed, and, as it were, governed by an unerring judgment and a superior ratiocination. It is unnecessary for me to say that I mean England."

"I hail thee, classic land of liberty, of science and philosophy; native country of Harvey, Locke, and Newton; thee who, heretofore, in the midst of Europe prostrated before her sovereign, first offeredst the august spectacle of an agreement solemnly entered into between a monarch and his people, and who, since that epoch, placed at the head of civilized nations, precedest them in the career of civilization, and in all those paths which lead to the progressive amelioration of our species! So often injured by servile voices and venal pens, receive with favour the homage of a free and disinterested man!" pp. 106-11.

Aneurism.—The glory of first tying large and deep-seated arteries, without the safeguard of tourniquets or compresses, is due, as M. Richerand very justly observes, to English surgeons.

"Not only has the aorta been tied, but even the aid of the collateral vessel, formerly looked upon as so precious, has been judged unnecessary. Thus in tying the femoral artery, it is thought a better practice to pass the ligature above the origin of the profunda, than immediately below it; for the current of blood being kept up near the ligature by so large a vessel remaining open, a cicatrice is either prevented from being formed, or it yields to the impulse of blood, and gives way. The greater number of hæmorrhages which follow the operation for aneurism have no other cause." p. 114.

Hunter's method of tying the artery far above the tumour ensures the performance of the operation upon a healthy part; and his single thread prevents the danger consequent to too violent an irritation. Our author does not think it necessary to interpose any thing betwixt the ligature and the artery; though M. Roux, of Paris, has done so with success in about twenty cases.

Varicose aneurism was looked upon rather as curious than a formidable disease, and seemed to require no remedy, where a remarkable case of this kind occurred, which has altered the opinion of surgeons concerning it. We will extract this case as reported by M. Richerand, as he says it has been erroneously stated by a set of lying and prejudiced journalists.

"A young merchant of Sedan, M. F. wounded himself in the middle and inner part of the arm: the effusion of blood, though abundant, was put a stop to by pledget, and the wound healed; but the veins of the limb swelled, and all the symptoms of varicose aneurism made their appearance, especially the rustling or whizzing sound, so peculiar to the disease. Though he could use the weakened limb without pain, yet fearing that the weakness might increase, or some other symptoms come on, he paid a visit to Paris, where, two years after the accident,

M. Dupuytren tied the brachial artery above the cicatrice. The operation was soon followed by numbness of the limb, which became cold and insensible ; the hand and fingers also were bended upon the wasted fore arm. M. F., thus mutilated, experienced in all the lower part of the limb so uncomfortable a feeling of cold and painful weight, that he determined to have the arm amputated. I accordingly performed the operation in June 1820, eight years after the original accident, and six after the ligature of the artery; and with complete success. Ten or twelve small arteries were found to be so much dilated as to furnish to the artery below the ligature a quantity of blood, at least equal to that which ran in the principal trunk before its obliteration. A large communication was established betwixt the vein and the brachial artery, more than two inches beneath the spot where the ligature had been placed ; so that by means of this opening, large enough to admit the fore finger, the blood must have passed from the artery into the vein above it, with so much ease, that it returned towards the heart, and the lower part of the limb did not receive a quantity sufficient for the maintenance of heat and life. But the most extraordinary thing in this dissection was the transformation of the veins of the limb into arteries, for the coats of the dilated veins were thickened, and had assumed the appearance of a yellowish texture, whilst the shrunk arteries were like veins in texture, a kind of metamorphosis, apparently connected with the influence which liquids exercise upon the organization of the vessels in which they circulate, an influence perhaps equal to that of the living solid upon the fluids submitted to its action."

" The above case has proved—1st, that, in cases where varicose aneurism establishes, betwixt the artery and the vein, a too large and too easy communication, almost the whole blood, which should have gone to the lower part of the limb returns by the vein, so that the lower part languishes and dies for want of nourishment ; and, 2d, that in this case, as well as in all wounds of arteries of a certain size, the injured artery should be tied both above and below the wound in its coats."—pp. 119-22.

In speaking of aneurism by anastomosis, M. Richerand claims the merit of priority of discovery, he having spoken of it in 1800, some years before the researches of John Bell upon that subject.

After stating the various methods employed for the cure of varix, the author informs us, that instead of tying the vein, he has been for a long time past in the practice of making a simple incision into the dilated veins. Divided longitudinally, the varicose vessels are emptied of the partly-coagulated blood which filled them ; the sides of the wound are kept apart, and the incision, which is always some inches long, is filled with charpie ; suppuration takes place, the cut veins inflame and are obliterated, without any irritation spreading to a distance, as frequently happens after the ligature, or even a simple puncture, and the patients recover, without any mark of the disease but the line of a

solid scar. I have shown to the academy a patient treated according to the process of incision, and cured of enormous *varices* of the left leg and thigh. The pain occasioned by the incision of varicose veins is much less than is generally imagined. A simple incision in the course of the dilated vessels, whatever be its length, never produces any thing but a momentary suffering, not worse than that occasioned by an incision of the smallest size. What patient, indeed, accustomed to hard labour, would not prefer a method of cure, as sure as it is expeditious, to the constant compression of varicose veins, or to chronic inflammations and ulcerations, which so often oblige him to interrupt his usual occupations?

Fractures.—Dessault and his school exerted, according to M. Richerand, a most pernicious influence on surgery, in so far as fractures are concerned; but fortunately his mechanical contrivances, which obtained the applause of Bichât, and appeared new to our author himself, and other great men, as the *ne plus ultra* of chirurgical genius, are now fallen into disuse.

In fractures of the clavicle, M. Richerand is of opinion that a pad placed in the armpit is of no use, or rather that it does harm, by the tight bandaging which it requires.

"The poet Legouvé," he informs us, "broke his collar-bone more than twenty years ago. I applied Dessault's bandage, and kept it on for six weeks, with all possible exactness. It was removed generally every five days, and a cure no doubt took place; but it was six months before the patient recovered from the stiffness occasioned by so constant and prolonged a pressure. Having since that time treated similar fractures in women, whose corpulency rendered the application of Dessault's bandage impossible, I found that a simple scarf or sling, so applied as to support the elbow, and kept to the side of the body, produced a cure equally complete. Instead of the axillary pad, which causes a painful compression to the chest and arm, I placed a simple compress in the armpit, with the view of absorbing moisture and preventing excoriation."—pp. 133, 134.

In fractures of the neck of the femur, little else is required but repose and a suitable position of the limb; nature has supplied a bandage. The limb should be kept immoveable, in a state of semiflexion of the thigh upon the pelvis, and of the leg upon the thigh, and to retain the limb in this position, a pillow and a bandage over and around the lower part of the thigh will be wanted.

Fractures of the knee-pan, and the neck of the humerus, require merely repose and a suitable position of the limb; the treatment employed by persons unskilled in surgery, if simple, being infinitely preferable to the so much vaunted mechanical contrivances of Dessault. M. Richerand here gives a hit to

some of the first rate surgeons of the day, who have the happy talent of curing imaginary fractures in a few weeks, without leaving the minutest trace of deformity.

The next subject noticed by our author is the means of remedying osseous deformity. Its cause is unknown, and all that surgery can do is to remedy the effects of an unknown cause, by mechanical means. These were first suggested by the vulgar process of restoring to its proper place a young tree which had followed a wrong direction, by tying it to a *tutor*. However, when the process was applied to man, it required to be modified in various ways. The spine, that fundamental part of the human edifice, that base of the skeleton, which is formed of a succession of bones a long time soft and always spongy, is the most common seat of those deformities, which we endeavour to remedy by mechanical contrivances. The first thing to be done, evidently, is to relieve the spine of an incumbent weight, which it is no longer able to support. This is done by the new perfected mechanical couch of Venel, a Swiss physician, and from this couch a young person who was quite crooked, will rise at the end of six or seven months perfectly straight. The mode of making those couches is now well known; but notwithstanding, they will be more or less skilfully fabricated according to the genius of the mechanician who is employed to make them.

They always effect a cure when the deformity is not excessive, nor the ricketty influence too intense.

"Living in a pure air, and enjoying all the resources of a restorative regimen, the patients commonly recover flesh and strength, the chest expands, respiration becomes freer, the natural complexion is restored, and the menstrual discharge is established, and keeps its regular periods. In the amendment of distorted feet, as well as of distortions of the spine, it is always the surgeon's wish, gradually to restore the diseased part to its natural direction, by means of gentle and long-continued traction, and it is only by a long-continued use of the means employed, that he can hope to obtain so fortunate a result. Men, therefore, of information, will hear with an incredulous smile, of women twenty-five years of age, and who had been cripples from the age of puberty, being perfectly recovered in the space of six or seven months by means of the couch or apparatus of continued extension."—pp. 157-63.

It may be observed as a general rule, that it will take years to remedy a distortion, which has been years in forming.

Resection of Joints.—M. Richerand doubts if this is really such an improvement in surgery, as many eminent surgeons have believed it to be; facts at least are wanting to put the matter beyond a doubt. In so far, however, as the upper ex-

tremity is concerned, he allows, that in many instances re-section may be advantageously substituted for amputation; and this is undoubtedly an improvement in modern surgery. The case is quite otherwise with regard to the lower extremities; here the inconveniences are numerous, and not a single advantage to counterpoise them.

Amputation.—The author condemns the amputation of a limb at the elbow and knee joints; it ought never to be practised. Partial amputation of the foot at its articulations is another matter; for if the heel can be preserved, the weight of the whole body may be allowed to rest upon it with safety and advantage. The author points out the mode of performing this last operation, which he had once seen sadly bungled, from the surgeon not having paid attention to the mark here given for hitting the articulation; namely, the tuberosity of the os naviculare, into which the tendon of the tibialis posticus is inserted. Amputation at the junction of the bones of the tarsus with those of the metatarsus, has the advantage of preserving the tendon of the tibialis anticus, which is an antagonist to the muscles of the calf, but this, according to our author, is but an imaginary advantage; yet he prefers amputation here, if the disease will admit of it.

The immediate re-union of the wound after amputation is an object of the highest importance; and to facilitate this, the section of the muscles and bone should be made with as much neatness as possible, and with sharp knives that act by fraction and not by pressure. The principal artery should be tied first, and then the collateral branches; and in doing so it is better to tie too many than too few. A good surgeon should despise the puerile glory of performing an operation with more than ordinary dispatch; at least such glory should never be put in competition with the inconveniences that the neglecting to tie some small arteries would occasion. A single waxed thread is all that is necessary to restrain the largest vessels; and after the artery is tied, one of the threads may be cut away close to the knot; but the cutting away of both is disapproved of by M. Richerand, we suspect more from theory than practice. The proposal made by some surgeons to keep the surface of the stump wet with iced water for some hours before laying the parts together, in order to promote adhesion, cannot but be hurtful; adhesion being best promoted by the natural heat of the parts.

Extirpation of Cancer. The operation in most instances is of no avail: yet, if one in a hundred escape death by its means, it ought certainly to be practised on every suitable occasion.

The operation in cases of relapse does not increase the malignity of the disease; but where there are symptoms of a cancerous diathesis, an operation is contra-indicated. M. Richerand recommends that cancer of the lip should be removed by means of scissars curved upon their flat (courbes sur leur plat); the process being both a simple and an expeditious one, and never attended with the laceration and contusion, so much dreaded from the use of scissars. The extirpation of the under jaw bone is disapproved of by our author, although he allows that the process of M. Dupuytren for this purpose is new and ingenious.

M. Richerand now comes to his own celebrated operation, where he extirpated some ribs of the left side, and which he says is unprecedented in the annals of the art. It is related at length, and is dwelt upon by the author with all the affection of a parent. We remember to have read of some such operation, but whether for cancer we are not sure, in the Journal Encyclopedique for 1750, or thereabouts. The particulars have escaped our memory, nor have we the book to refer to; all we know is, that it was a horrible operation. The subject has called from the pen of M. Richerand some ironical remarks on the conduct of several of his *very dear brethren* of the Faculty of Paris.

In performing the operation for sarcocele, our author recommends the mode of one of his pupils, M. Aumont, which consists in raising up the scrotum, and opening it longitudinally from behind, by which the scrotal arteries are not only avoided, but a free exit is given to the pus formed. At the same time, the ligature must be applied round the spermatic cord with such force, as at once to disorganize its nerves. But this mode of operation is probably inapplicable, where the scrotum is ulcerated.

With regard to cancer of the uterus, we should not decide as to its existence by touch alone, but should call in also the aid of sight, which may be obtained by means of Professor Recamier's speculum. To destroy cancer of the os tincæ, French practitioners make use of caustic applied at intervals; but M. Richerand seems to prefer its excision according to the process of Ossiander.

The work, of which we have given a rather full analysis, is closed with some remarks on the theory of Broussais. Of that theory, in its full extent, our author disapproves; but he thinks it may have done good, by rendering practitioners more circumspect in the use of stimulants.

Upon the whole, we rise with satisfaction from the perusal of M. Richerand's history; he may be thought by some to be a

vain man, and to be too ambitious of literary fame; but he writes with much knowledge of his subject, and, if we except a few sarcasms, with great candour. He evidently knows he is a famed surgeon; and we are sorry to observe that he seems not to meet with all that patronage to which his merits justly entitle him.

ART. II.—*A Compendious System of Midwifery, chiefly designed to facilitate the Inquiries of those who may be pursuing this Branch of Study.* With 14 Engravings. By W. P. DEWEES, M. D. London, reprinted, 1825. pp. 628.

Dr. Dewees is not altogether unknown by reputation in this country, and the present eminently practical work is well calculated to raise him in our estimation. In a subject so copious and extensive, it would of course be too much to expect that the results of the experience of a single individual should in an equal degree illustrate every part; but we may safely assert, that a long time has elapsed since any work so generally useful has appeared on the subject in our language. Dr. Dewees is in many respects original in his pathological and curative views; and in all circumstances he appears to be careful of granting his assent to principles which he has not himself had the opportunity of verifying. At the same time we must add, that in not a few instances he has carried this scepticism to an unnecessary, or even ridiculous extent, and that it has not unfrequently led him into frivolous and captious criticisms on the opinions of the most eminent of those who have preceded him.

A systematic work necessarily includes many points, which, however essential in themselves, are so generally admitted and known that they will not bear repetition. Of all such we shall study to keep clear in our analytical labours, and attach ourselves to those peculiarities of opinion which are most striking or most likely to be useful.

After stating the fact, that labour at the full time is, generally speaking, impracticable, if the superior aperture of the pelvis be less than three inches, Dr. Dewees appeals for evidence on the subject to the experience of Europe, stating his belief,—" that the united experience of all the American practitioners would not have led to a correct conclusion upon the subject, as the occurrence of deformity of the pelvis in that country is so very rare as not to have been even encountered by some practi-

tioners of pretty extensive experience; and as far as regards our own, we must declare, that we have not met with extreme deformity in American women three times in our lives; and when it has occurred to such an extent as to render labour impracticable by the natural powers, it has uniformly been with European women." p. 19.

Dr. Dewees insists with much force and probability on the propriety of considering the neck of the uterus as a distinct organ, if we may so express ourselves, from the body and fundus.

"My reasons for thinking so are, first, that we find the fundus and body may be distended to a great extent, without affecting the arrangement of the neck; thus, in every uterine pregnancy, we see these parts gradually yield to the influence of the ovum, until about the sixth or seventh month; while the neck remains very much the same as before impregnation.

"Secondly, that after the sixth or seventh month, the neck undergoes its changes, while the fundus and body remain in a great measure stationary; so that two distinct processes, or rather the same process is performed at two different periods, and in different parts, in the order we have just mentioned.

"Thirdly, that the neck may be affected by disease, while the fundus and body may remain free, and the reverse; and that the neck may contract and relax, while the other parts are in opposite states; thus with women who are in the habit of aborting from some peculiarity of the uterus, we find the body and fundus may be excited to action, while the neck for a long time remains passive; and also the neck may relax, and, after some time, the fundus and body may be excited to contraction. And in cases of atony of the uterus after a too sudden delivery, the body and fundus may contract, while the neck is the only part in fault, and vice versâ.

"The different conditions that the parts of the uterus may be in at the same time, where atony partially prevails, would seem to demonstrate the truth of what is here advanced. For it is a fact well known to almost every practitioner of midwifery, that each of the parts into which we have divided this viscus, may separately and independently of each other be in a state of relaxation or contraction, and thus exhibit different phenomena, and be productive of different results." pp. 39, 40.

Retroversion of the Uterus.—After giving pretty nearly the common explanation of the nature and causes of this disease, we find Dr. Dewees dwelling strongly on the propriety of an early replacement of the organ. He appears to have formed a very exaggerated idea of the danger of delaying this operation, even when it is possible to secure the discharge of urine from the bladder. His injunctions on this point are calculated to mislead, and to induce the practitioner to devote too much attention

to what is comparatively the least important part of the complaint. The only possibility of mischief arises from the imperfect evacuation of the contents of the bladder, which may always be obviated by employing a catheter of more than ordinary length. We cannot find that Dr. Dewees has shewn any bad effects attributable to the mere retroversion at all comparable with those which may arise from premature attempts at reduction. We are little disposed to coincide with his suggestions as to the treatment to be pursued when the reposition proves impracticable, in which case we find him recommending, seriously, to produce abortion by rupturing the membranes through the os tincæ, which he is obliged to confess would be very uncertain as to success, even if practicable; or to puncture the uterus through the rectum, as suggested by Dr. Hunter, and successfully done by a M. Jourel. Surely there is nothing in either of these propositions so very encouraging as to tempt us to employ them in preference to leaving the case to nature.

Dr. Dewees believes in the possibility of menstruation during pregnancy, and explains it by the fact, that for the first two or three months the inferior portion of the uterus, and more especially the neck, are not always occupied by the decidua, but left free and unembarrassed as before impregnation. To prove that this portion is sufficient for the purpose, he adds—"My friend, Dr. Coxe, the present Professor of Materia Medica, gave me a diseased uterus, in the cavity of which there was a healthy portion of surface, not exceeding in size a common thumb-nail, and from which this woman had yielded at every menstruous period a quantity of fluid; and as far as could be detected by its sensible properties, of a perfectly healthy quality." p. 96.

Fluor Albus.—In the treatment of this complaint, when uncomplicated, Dr. Dewees places great confidence in the internal use of cantharides in the form of tincture. The mode of administration will be best understood from his own account.

"We always commence with a direction, that the parts are to be regularly washed with warm water three or four times a-day—if the patient be plethoric, we cause her to be well purged, confine her to a milk and vegetable diet, and sometimes order her to lose blood—when the pulse is sufficiently reduced by these means, or if the pulse be in a proper condition without these means, we then commence with the tincture of cantharides; of this we direct thirty drops every morning, noon, and evening, in a little sugar and water, increasing the dose every third day five drops at a time, until strangury is produced, unless the disease is arrested, which is not unfrequently the case before the symptom appears. Should the complaint withstand the first strangury, we are not discouraged, but re-commence the tincture at the original dose of thirty drops, and increase it as before, until a difficulty in

making water is again experienced—it rarely, however, withstands the second irritation of the bladder." pp. 119, 120.

He states his conviction that this plan, when persevered in and properly conducted, will rarely fail to effect a cure. He assures us, that when it is unsuccessful, the fact is generally owing to its not having been carried to a sufficient extent, and that he himself has never witnessed any thing more than temporary inconvenience from it, although he has occasionally given it in what might appear hazardous doses. In two instances the dose was gradually increased to two or three hundred drops three times a day, without producing strangury, until this quantity had been persevered in for several days consecutively.

In the treatment of *Dysmenorrhœa*, after laying down the division into the temporary and the radical, Dr. Dewees informs us, that with the first view nothing has appeared to him more effectual than camphor in large doses. He recommends that about ten grains should be given in the first instance, and repeated in an hour or two if it do not at once produce relief.—"Sometimes," he says, "the stomach is much deranged in this complaint, and will bear nothing upon it: when this happens we order thirty or forty grains of camphor to be rubbed down with a few drops of spirit of wine, one drachm of laudanum, and three ounces of thin starch or flax-seed tea as an injection.

For the purpose of preventing the return of this painful affection, besides a proper attention to the obvious conditions of the general system, Dr. Dewees places the most perfect reliance on the effects produced by the tincture of guaiac. prepared in the following manner:—

℞. Pulv. G. Guaiac. opt. ℥iv.
Carbon. sodæ vel. potass. ℥iss.
Pulv. Piment. - ℥i.
Alcohol. dilut. ℔j. Digt. per dies paucas.

The vol. sp. of ammonia being added in the proportion of a drachm, or two to every four ounces of tincture: less or more according to the state of the system.

Dr. Dewees explains the causes of its occasional failure in the hands of others by two circumstances, viz. 1st, from their not placing the system in a proper situation for its use; and, 2d, by not properly persevering with it.

"The mode of using it is, a tea-spoonful every morning, noon, and evening, in a wine-glassful of sweetened milk, or where not forbidden by some peculiarity or circumstance, as much white wine, as Sherry, Teneriffe, or Madeira. The dose must be gradually increased in those cases where a perseverance beyond four or five weeks becomes necessary. Should this medicine disturb the bowels too much, a few drops of laudanum must be added to each dose; but if, on the contrary, they

should not be sufficiently opened, the addition of a little of the resin of jalap or powdered rhubarb will be an improvement." p. 144.

The Term of Utero-Gestation.—The Peerage case lately agitated in this country served to elicit some information on this point, and in a still greater degree to prove the deficiency of any positive authority on the subject. Dr. Dewees is of opinion, that as there are many causes which may provoke the uterus to contraction a short time before it might take place spontaneously, so there may be some which may procrastinate the period. He admits that we have no certain mark from which to date the precise period of conception, but adds, that opportunities occasionally occur where the utmost accuracy must prevail: the following for instance:—

"The husband of a lady, who was obliged to absent himself many months, in consequence of the embarrassment of his affairs, returned one night clandestinely, and his visit was only known to his wife, her mother, and ourselves. The consequence of this visit was the impregnation of his wife; and she was delivered of a healthy child in nine months and thirteen days after this nocturnal visit. The lady was within a week of her menstrual period, which was not interrupted, and which led to hope she had suffered nothing from this intercourse; but the interruption of the succeeding period gave rise to the suspicion of her pregnancy, which was afterwards realized."

"This case is remarkable for two of its facts; one, that a woman in perfect health, and pregnant with a healthy child, may exceed the period of nine months by several days; the other is, that a woman may become impregnated just before her menstrual period, and not have that interrupted; whence it would seem, that a check is not immediately given to the catamenial flow, by an ovum becoming impregnated."

After Pains.—Under this head, Dr. Dewees describes some cases of a very distressing kind, consisting in a severe and constant pain at the extremity of the sacrum and coccyx. It begins the instant the child is born, and perseveres with most agonizing severity until its violence is overcome by the rapid and liberal use of camphor and opium. It is declared by the patient to be infinitely more insupportable than any pains of labour, as it is never-ceasing.

In the classification of labour, Dr. Dewees has almost implicitly followed the arrangement of Baudelocque, and has thus been led to enter into descriptions of the different positions in which utility is sacrificed to accuracy, and a want of due discrimination evinced, by devoting an unnecessary degree of attention to cases confessedly of very rare occurrence. In fact, most of the peculiarities of practice, which might strike an English reader, are borrowed, with occasional acknowledgments, from

Baudelocque, and leave but little else to the American Professor than some singular, and sometimes ingenious, theoretical opinions. Nor, in our opinion, is this circumstance without its advantages, as by it we obtain the desideratum of a work intermediate between the doctrines and practice of the most eminent French and English writers.

We purposely avoid touching on the chapters descriptive of the various presentations of the head, with their mechanism, and the treatment of the accidents which may complicate and render them difficult or preternatural.

Forceps.—Dr. Dewees' partiality for the practice of the French, and of Baudelocque in particular, is no where more evident than on this subject, and particularly in the preference he displays for the long forceps. We give his own reasons :—

" We shall then briefly state the objections which experience has suggested against the short forceps, which, for a number of years, were the only ones we employed, but which we abandoned in favour of the long, from a conviction of their inferiority. First, they can only be employed with any advantage when the head occupies the lower strait. Second, when it is required to deliver from the superior strait, or above it, neither their length nor their form will permit their application, and we are then obliged to abandon them for the long ; but the converse of this is never the case. Third, that from the shape and shortness of their handles they become very inconvenient to the operator, forbidding, for this reason, the employment of a sufficient force to overcome the resistance. Fourth, their mode of union is such, as to render them extremely inconvenient to the operator, and oftentimes very painful to the patient, by including in their locking, either a portion of the soft parts, or of the hair of the pudendum, and thus creating a great deal of pain.

" In favour of the long, we may state, that they have not one of the above objections attached to them ; for they can be used in any position or distance of the head within the pelvis ; that the form and length of their handles give great and decided advantages to the operator, rendering his exertions more effective, and very much less fatiguing ; and their mode of union is such, as to obviate the very serious objection urged against the short, as they lock without the vulva in high situations of the head, and remote from it in the lower positions of it—besides, they unite in themselves the forceps, the lever, and the blunt hook." p. 297.

In this comparison it will be observed that Dr. Dewees employs the long forceps alike, whether the head be above or below the superior aperture of the pelvis. When the head remains above the superior aperture, the long forceps are of course alone applicable ; but when it has approached nearer the outlet of the pelvis, the arguments he has adduced are calculated rather to prove that the long forceps may be applied than that

they possess any decided superiority over the short ones. Of the four objections which he has advanced against the latter, the only legitimate one consists in the inconvenient situation in which they are commonly made to lock. Even this is certainly much exaggerated; and at all events is completely obviated by the improved mode of locking suggested by Dr. Davis in his valuable work on Operative Midwifery.

In this as in many similar subjects, the difference in the sentiments of men of equal eminence and experience only serves to show that the construction of an instrument must always be of infinitely less consequence than the skill of the hand that conducts it. It has been very much the custom in relation to this matter, to assert that we should form our estimate of the merits of the instrument solely from its effects when employed by qualified persons. But surely there is some delusion in such a statement; who will be bold enough to say that the use of instruments in midwifery is now, or is likely, under any change of circumstances, to be confined to qualified individuals! Is it therefore unreasonable, in forming an estimate of the merits of an instrument, to inquire not only the good that it may do when employed by the prudent and the instructed, but also the harm that it may work in the hands of the rude, the rash, or the ignorant? Admitting that the long forceps are alone calculated to aid us in operating upon the head, and in that very limited class of cases authorizing the application of such instruments whilst it is still above the superior aperture of the pelvis, it is probably not too much to say that in most, or in every other position of the head, the short forceps may be employed with equal efficacy, and with infinitely less hazard of doing mischief. This consideration alone appears to us decisive in favour of the latter, in all cases, excepting the particular class to which we have already alluded, and for which they are neither calculated nor proposed.

Dr. Dewees is a decided advocate for the early employment of the forceps. He justly states that many of the evils which, under certain circumstances, appear to follow their application, really existed before they were employed, and might have been obviated by their timely and judicious use. On this topic he very severely criticises the opinions of the late Dr. Denman, and not without some appearance of justice. At the same time we conceive that he has formed a very exaggerated idea of this author's reluctance to admit instrumental assistance, and that in more than one instance he has fastened with needless acrimony on the literal sense of the Doctor's expressions in his

Aphorisms, without paying that degree of attention which candour required, to the general tenor of his instructions.

Though we are willing, however, to vindicate the reputation of Dr. Denman, we are not inclined to propose his practice as the standard of what is prudent or right. It is not so much in extremes as Dr. Dewees would lead us to believe, but on the other hand, it falls much short of that degree of vigour and decision which has received the almost universal approbation of more modern practitioners. The subject even at present is not without its difficulties, as we still remain, and probably may long continue, without any very positive criterion on which to establish the proper time for interference. We have so lately touched on this matter, that we shall do no more than give an extract from Dr. Dewees.

"The objections against the forceps are founded upon an erroneous estimate of their tendency; that they have been misused we are willing to admit, and so has almost every thing else; but that they have been more productive of good than evil we are every way persuaded. As regards the child there can be no hesitation; and as they may have affected the mother, we are morally certain they have been equally beneficial. It is entirely within our recollection, when cases similar to those which are now almost universally relieved by the forceps, were as constantly treated by the crotchet; the child a certain victim, and the mother a probable one."—p. 305.

After the general remarks on the forceps and on their application under ordinary circumstances, Dr. Dewees, in imitation of French writers, gives minute and precise directions for their employment in the less usual presentations. And here candour compels us to say that the English reader will meet with information which he will in vain seek for in any work in his own language with which some attention to the subject has made us acquainted. Even the valuable and recent Treatise of Dr. Davis, a work well deserving the favourable reception it has met with, forms but an incomplete exception. We are aware that some may undervalue such instructions, from the acknowledged infrequency of a large proportion of the extraordinary presentations of the head, and from the improbability of a necessity arising for the use of forceps in such situations. It is enough, however, to know that such a necessity may exist in order to be convinced of the advantages we must necessarily derive from an acquaintance with the peculiar modifications required to adapt the ordinary means of relief to the exigencies of each individual case.

Dr. Dewees conceives that the reluctance ordinarily felt to the use of the forceps when the head is above the superior

aperture of the pelvis has arisen, not so much from the contemplation of its dangers, as the consciousness of its difficulties. We know not how far this may have once been the case, but at the present day we are satisfied that the tendency of practice, though perhaps not of instruction, is in an opposite direction, and that the forceps are, we may say, often applied under such circumstances in cases where their use is either unnecessary, or most lamentably injurious.

"Fortunately," says Dr. Dewees, "the necessity for operating with the forceps, while the head is in this situation, but rarely occurs, especially in this country, where the only apology for their use, a narrow pelvis, is of but very rare occurrence. We have been obliged to use them but three times in this situation in five and thirty years; our experience, of course, is very limited. On this account, especially, we would wish to refer to the high authority just mentioned, (Baudelocque,) and on this account also, we shall forbear to give directions for their use. We believe, that the frequent mention of difficult, dangerous, and rare operations, leads oftentimes to the unnecessary performance of them; sometimes not so much from the necessity of the cases, as the eclat which attends them, though they prove even unsuccessful. In surgery we have known it more than once to have been the case, and once certainly in midwifery."—p. 324.

Among the most original and valuable parts of Dr. Dewees' Treatise, is the Chapter on *Rigidity of the Soft Parts, as the Cause of Preternatural Labour.* He makes various and minute divisions, of which the most important are, rigidity dependent on an inflammatory condition of the soft parts, and rigidity arising from previous injury done to the parts, either by mechanical violence, or by inflammation and its consequences. In both of these conditions he speaks with the utmost confidence of the efficacy of blood-letting, carried to a very considerable extent.

We annex a case of the latter description:—

"*Case First.*—June, we were called to Mrs. T——, in labour with her second child. When we arrived we received the following account of the case from the midwife in attendance: 'Mrs. T.—— has been in labour sixteen hours; the waters discharged six; the mouth of the womb is but little opened; and, when in pain, the os externum seems to close up; the child is as high as ever, though many things have been given to force the labour. She has passed no water for twelve hours, and she is very costive.'

"We found her very feverish, complaining of great heat in her abdomen, and violent pain in her head. On examining her, per vaginam, we found, as the midwife had stated, that the os tincæ was but little dilated; its edges very rigid and hot—as was the whole tract of the vagina; the rectum much distended with fæces, and the bladder by

urine. The head of the child was still above the brim of the superior strait; but its situation could not be exactly determined, as the os uteri was not sufficiently opened for the purpose.

"We bled her immediately, to the amount of twelve or fourteen ounces, and ordered an injection, which procured two stools and a discharge of urine. We now found, upon examination, the mouth of the uterus to be more dilated, which enabled us to determine that the presentation was a perfectly natural one, and was now lower in the pelvis. The pains were very powerful, and the head at length cleared the upper strait, and the vertex was about to turn under the arch of the pubes, but completely enveloped in the uterus—during a pain the perinæum was much distended; the os externum, instead of yielding to the impulsive force of the uterus, rather closed, so that two fingers could not be retained at once. A seam or cicatrice formed a kind of barrier, and the head in consequence was thrown to the right side of the inferior strait, where the parts were so extremely stretched that we feared each pain would make the head burst through them in spite of every exertion to the contrary.

"From the oblique situation of the head with respect to the vagina, the os externum, instead of answering to the axis of the inferior strait, was mounted up directly to the pubes; consequently the right side of the vagina, perinæum, and rectum, had to support the greater part of the force exerted by the uterus and its auxiliary powers. In order to counteract their influence we supported the external parts with our hands, and made during each pain a strong pressure against the head, and directed the woman to suspend her voluntary powers as much as possible.

"Six hours were spent in this manner without advantage; the os uteri still rigid, hot, and but partially dilated; the os externum not disposed to yield, and the cicatrice as firm as ever. The head advanced, notwithstanding our efforts to prevent it, so that the vertex, covered with the uterus, had partly emerged from under the arch of the pubes."

In another case of the same kind which was eventually relieved by the same treatment,—"a strong infusion of tobacco was, after several ineffectual trials, thrown up the rectum; it produced great sickness, vomiting, and fainting; but the desired relaxation did not take place:—we waited some time longer, but with no better success. In the course of an hour, or an hour and a half, the more distressing effects of the infusion wore off, and resolving to give the remedy every chance in our power, we prevailed on our patient, with some difficulty, to consent to another trial of it; its effects were the same as before,—great distress without the smallest benefit, the soft parts remaining as rigid as before its exhibition."—p. 378.

In uterine hæmorrhage previous to delivery, particularly in the early months of pregnancy, Dr. Dewees uses two remedies, neither of which are very extensively employed in this country,

viz. acetate of lead, and the plug or tampon. Of the former he gives two or three grains, guarded with opium, every hour, half hour, or less frequently, as circumstances may require.

"In case the stomach be irritable, a very efficient mode of exhibiting it is per anum;—*twenty* or *thirty* grains may be dissolved in a gill of water, to which may be added a drachm of laudanum; this must be repeated pro re nata."—p. 412.

We have no personal experience of the employment of this active medicine under such circumstances, and are therefore incapable of deciding how far the peculiar condition of the system, when reduced by hæmorrhage, may modify the ordinary effects produced by it; but we have it in our power to assert that much smaller doses, and at longer intervals, have speedily induced most threatening symptoms of colic and palsy.

The safety and efficacy of plugging are much less questionable, though it is probably less employed in English practice than it deserves. In hæmorrhage from accidental causes in the early months of pregnancy, there is no reason to doubt that it possesses considerable efficacy, and in other cases it will often enable us to gain time, and to spare an unnecessary and debilitating effusion of blood, even though abortion should be eventually unavoidable. Mr. Burns is, perhaps, the only systematic writer in this country who has attached a due degree of importance to its use, and to his treatise we may unhesitatingly refer for much valuable and precise information respecting it. In hæmorrhage during the latter periods of pregnancy, Dr. Dewees supports the efficacy of the plug by the following arguments:—

"It may be asked, what are we to do in cases of profuse hæmorrhage, at any period from the fifth month to the full time, when the discharge threatens the life of the patient, and when the os uteri is both close and rigid? Are we to silently witness her death, rather than employ some violence to relieve her? Certainly not. If there really was no other remedy, forced delivery, with all its disastrous consequences, might be justifiable; but as we have the power of plugging the vagina, and thus preventing the farther issue of blood, we should have immediate recourse to it: and this plan, so far as we have witnessed, has not yet failed; and this experience is so supported by that of Leroux, as to entitle it to the utmost confidence. By this means, time is permitted to the natural agents of delivery for the performance of their duties, and this is done, for the most part, with both certainty and success.

"The importance of the tampon is, perhaps, never so clearly demonstrated, as when it is employed in those cases where the flooding has proceeded to almost complete exhaustion—where every ounce of blood is of immense value. In such cases (before delivery) we have seen it arrest a profuse flow in almost a moment, and where the farther loss of a few ounces must have been followed by death. Syncope, and even convulsions, have ceased upon its application."—p. 429.

Rupture of the Uterus.—Dr. Dewees strenuously opposes the doctrine inculcated by Dr. Denman, as to the treatment of this accident; viz. that artificial assistance is useless, if not injurious; and that the patient has a better chance of recovery, if the case be wholly abandoned to the efforts of nature. In this particular his advice accords with the dictates of common sense, and with the practice most commonly resorted to. We doubt, however, whether as much can be said for his proposal to perform gastrotomy, if the condition of the pelvis will not permit delivery by the natural passages.

Here we must bring our labours to a conclusion, though without pretending to have exhausted the rich store of materials contained in this truly meritorious work. We are acquainted with few writers who have shewn themselves more completely acquainted with their subject, or less disposed to take facts for granted without due examination. Dr. Dewees evidently possesses some peculiarities of opinion, which are sometimes ingenious and always respectable. His style of writing is singular; it is quaint and painfully laborious, sometimes with an affectation of sentimentality closely bordering on the ridiculous. All these, however, are minor considerations, and may well be pardoned when we find them counterbalanced by precise information and accurate discrimination.

ART. III.—*Piecis Elementaire de Physiologie,* par F. MAGENDIE, Membre de l'Institute de France, &c. Tom. 2. Paris, 1825. Second Edition.

An Elementary Compendium of Physiology for the Use of Students. By F. MAGENDIE, M.D. &c. *Translated from the French, with copious Notes, Tables, and Illustrations.* By E. MILLIGAN, M.D. Fellow of the Royal College of Physicians, &c. &c. Second Edition, greatly enlarged. Edinburgh, Carfrae and Son. 1826, pp. 618. 8vo.

We are under much obligation to M. Magendie for the assiduity he has so long displayed in the cultivation of Experimental Physiology. There are probably many to whom this very useful Manual of the science is not yet known, and we are happy in the opportunity which a Second Edition offers of giving a general idea of its contents, and more particularly those parts which now appear in it for the first time.

We would premise, however, that those who would expect to find in it a comprehensive view of the doctrines of physiology in general, will be somewhat disappointed. Like most of his coun-

trymen, M. Magendie never gives his authorities; and, in fact, with him it is the less necessary, as he treats in a satisfactory manner of those subjects only which have received illustration from his personal inquiries and experiments.

M. Magendie is firmly impressed with the belief, that until he himself set the example, physiology had never been studied with a philosophical spirit, and that the dictates of imagination usurped the place which should have been occupied by the results of experiment and observation. If he allows a few exceptions, they are but partial ones, and attributable to accident rather than design. Though strongly characteristic of national, and, perhaps, of personal vanity, we will not deny that there is some foundation for the assertion, nor are we disposed to deny M. Magendie's claim to approbation in the example he has given, and which has been so actively followed up in other quarters.

"The injurious and absurd prejudice," says he, "that physical laws are incapable of influencing living bodies, has lost its force; the judicious have begun to discover that there may be different orders of phenomena in the living animal, and that purely physical ones are not incompatible with purely vital processes. It is allowable to hope, that in future physiologists will not be so vain as to give the most deplorable proofs in their works of their ignorance of the first principles of physic and chemistry."

"It is no longer doubtful that researches made on animals are applicable, with most admirable precision, to the phenomena of life in man: all uncertainty in this respect is removed by the brilliant light cast upon pathology by the recent experiments relative to the nervous functions. Pref. p. 10.

One of the first additions to the present publication consists in a new arrangement of varieties of the human species, for which the author acknowledges himself indebted to M. Desmoulins, a zealous cultivator of zoology and comparative anatomy.

He has increased the number of varieties far beyond any arrangement with which we are acquainted. They are

1st. Celto-Scytho-Arabs; including the inhabitants of all Europe, its polar regions excepted; of Asia as far as the Ganges; and the sources of the Irtisch; of the North of Africa; of Egypt and Abyssinia.

2d. Mongols; the inhabitants of Greenland, of the polar regions of Europe and America; of Asia beyond the Ganges, the mountains of Belur and the Irtisch.

3d. Ethiopians; inhabiting Africa from the Senegal and Niger to the south of the Southern Tropics.

4th. Euro-Africans; inhabiting the eastern coast of Africa, on the Indian Ocean, and separated from the Ethiopians by a chain of mountains running parallel to that sea.

5th. Austro-Africans; inhabiting the extremity of Africa to the south of the Tropic of Capricorn.

6th. Malays; inhabiting the coasts of Indo-China, the Asiatic Archipelago and Oceanica, as far as Madagascar.

7th. Papous; inhabiting the little islands around New Guinea, Waigiou and New Guinea itself.

8th. Oceanica Negroes; inhabiting at the present or at former periods the north of the western parts of Oceanica, some little Archipelagos of Polynesia, a great part of the Indian Archipelago, and some countries of Indo-China and the adjacent islands.

9th. Australasians; the inhabitants of New Holland, &c.

10th. Columbians; the Tschutkis of the N. E. of Asia: the inhabitants of the whole of North America, of the plains and slopes of the Cordilleras from Chili to Cumana, and the Caribbean Archipelago.

11th. Americans; inhabiting South America to the south of the Amazons and Orinoco, and to the east of the Andes and Rio de la Plata; the inhabitants of Paraguay and the Patagonians between Magellan's Strait and the Rio de la Plata.

We are not aware of any advantage to be derived from thus multiplying the number of varieties, which might be done to almost any extent, were we contented, with M. Desmoulins, to rest our arrangement on characteristics which are merely national, and might be made to vary with every five or six degrees of latitude and longitude.

After a brief sketch of the solid and fluid elements of the human body, M. Magendie speaks of vital properties and of life. The vital properties commonly admitted are; Organic Sensibility; Organic Contractility; Animal Sensibility; Irritability; and Animal Contractibility. The two former of these would alone deserve the name of vital properties; but though much has been said and speculated about them, their very existence is unproved; they are in fact mere "entes rationes," speculative abstractions, the existence of which has been inferred from a supposed necessity, and can neither be proved nor refuted. M. Magendie at once rejects them as unworthy of serious notice, and as calculated to exert an injurious influence on physiology and pathology, by substituting imaginations for facts. The other vital properties, as they are called, have no just pretension to the appellation; they are either confined to particular structures, and are in truth *functions* resulting from the combined actions of systems or organs.

As to life, or rather the cause of life, for the word itself conveys no other meaning than an expression of the phenomena

resulting from a certain succession of organic actions, M. Magendie is equally careful to avoid entangling himself in the confused maze of physiological metaphysics. After recapitulating some of the thousand and one names with which philosophers have endeavoured to fetter this phantom, he is cruel enough to inquire

"What do all these expressions mean? We may adopt two different modes of proceeding with respect to them; we may either realise them or create them into beings having the power of producing the vital phenomena; but in this case, are we not something like the savage, who makes a god of the stone himself has sculptured? Our other method is to acknowledge that these words designate the unknown, and probably incomprehensible cause or causes of the actions of life; if so, it must be confessed that the science gains but little by the invention." —p. 27.

In treating of the functions, M. Magendie commences with the functions of relation (animal), and first of vision. It is not our intention, however, to lead our readers through the monotonous details which are within the reach of all; we shall content ourselves with noticing what is new or peculiar.

Action of the Eye-lids.—Their occasional motion, *nictitation*, protects the front of the eye from the effects of the prolonged action of the air. This motion depends partly on the *facial* nerve, and partly on the *fifth pair*. It ceases when the facial nerve is divided; when the *fifth pair* is cut, it either ceases or occurs but rarely, and only from the effects of a very strong light. p. 44.

The Conjunctiva.—It is uncertain whether this membrane covers the cornea. M. Ribes thinks that the latter is covered by a distinct membrane, united to, but not continuous with the conjunctiva. The conjunctiva is an absorbing surface, and the symptoms of poisoning are readily produced by applying various active substances, Prussic acid for instance, to it. Is it probable that a free application of belladonna should have produced unpleasant effects in the human subject, as has been suggested? We doubt it.

The sensibility of the eye belongs to the conjunctiva, and is there much greater than in any other part of the organ. It is dependent on the ophthalmic branch of the fifth pair. When that nerve is divided, the surface of the eye is insensible to the most powerful stimulants, even those which act chemically on its composition. It is remarkable that the section of the nerve is always followed by violent inflammation of the membrane, with suppuration, but no sensibility. M. Magendie has not noticed a singular circumstance as relates to the sensibility of the

anterior surface of the eye, viz. that its acuteness appears to depend upon the contact of opposed surfaces of the palpebral and ocular conjunctiva. The most minute body interposed between them is intolerably painful, whilst either, when touched alone, is nearly insensible. For this fact, among much valuable instruction, we are indebted to Mr. Guthrie's excellent work on the Operative Surgery of the Eye.

Course of the Tears.—Physiologists suppose that the tears flow towards the internal angle of the eye in a triangular canal, interposed between the edges of the eye-lids and the front of the organ. According to M. Magendie, this canal does not exist, the eye-lids touching not with a rounded edge, but by their flat margins. Even admitting the existence of such a canal, its mechanism would only be applicable when the lids were closed, as in sleep, and the explanation would be inapplicable to what takes place when they are separated.

According to M. Magendie, the tears are partly evaporated or absorbed from the surface of the conjunctiva. The surplus is conveyed by the motion of nictitation to the internal angle of the eye, whence they pass into the lacrymal ducts by a process he does not venture to explain, though he thinks that the capillary action of those organs forms the most probable supposition.

The Iris.—Dr. Edwards has demonstrated that the Iris is formed of four layers *easily* distinguishable; of which two are the continuation of the two layers of the choroid; a third belongs to the membrane of the aqueous humour; and the fourth forms the proper structure of the Iris. We do not know what is meant by their being easily distinguishable, but any one that will take the trouble to examine the membrane, will easily convince himself that a fourth part of its thickness can have no very evident or characteristic properties. We do not know whether M. Magendie has this delicate film in view when he proceeds to say, that—"according to the latest researches, it appears that this membrane is muscular, and composed of two layers of fibres; the external one, radiated; the internal, concentric, and serving to close, as the former to dilate, the pupil." We do not put any faith in statements of this kind; and for the plain reason that, though equally positive, none are accordant with the others, and none are supported by the authority of those who seek information merely without looking at hypothesis.

The Retina.—M. Ribes considers it not as an expansion of the optic nerve, but as a membrane on which the ramifications of the nerve are distributed: apparently a distinction without a difference. The yellow spot of Sœmmering is found not only in

man, but in apes and many reptiles. For its discovery in the latter we are indebted to Dr. Knox.

M. Magendie does not pronounce positively as to the decussation of the optic nerves in the human subject. Pathology affords facts on both sides of the question. Dr. Wollaston has lately suggested that the decussation exists in the inner half only: but his arguments, though, like every thing he puts forth, ingenious, are by no means satisfactory.

Use of the Crystalline.—M. Magendie does not admit a rigorous comparison between it and a lens. He supposes that the light passing near the circumference is refracted in a different manner from that which passes through the centre; and consequently, that the *variations in the size of the pupil* must influence the mechanism of vision in a manner deserving further attention.

To those who are acquainted with the physiology of the eye, it is unnecessary to say any thing of the difficulty which has been found in explaining the method by which the organ exercises distinct vision at different distances. Experiment, however, is here at variance with theory, and M. Magendie found, that in a dead eye the image formed on the retina was equally distinct whether the object was near or remote. Various explanations have been proposed of an effect, the existence of which we are now told is doubtful. In corroboration of the inferences to be drawn from his own experiment, M. Magendie states that M. Simonoff, a Russian astronomer, has asserted, on the authority of calculation, that no changes in the form of the eye are necessary to effect this accommodation of the organ to different spheres of vision. We know not how this is to be reconciled with the first principles of optics; but whether the theory or the experiment be right, the difficulty in either case appears equal. It has been suggested that the size of the pupil undergoes changes corresponding to the varying distances of the objects viewed, an idea on which M. Magendie throws doubts, though, without making any complete decision. The opinion of a voluntary power of motion in the iris is similarly circumstanced; but we find that he speaks more favourably of it. We will not deny the occasional existence of such a power, but we conceive that it is not by any means universal, and that it cannot perform a very important share in the phenomena of vision.

The use of the choroid may be supposed to vary in different kinds of animals, according to the colours it exhibits: in man, &c. its dark pigment serves to absorb the superfluous rays of light after their passage through the retina, whilst in animals, possessing a brilliant tapetum, an effect entirely opposite is pro-

duced, viz. a reflection of the rays of light, and consequently a virtual increase of its quantity.—See a very ingenious paper of M. Desmoulins, translated in a former Number of this Journal.

The principal functions of the retina are sufficiently well known, although many of the ideas entertained as to its properties and mode of action are far from being established. M. Magendie doubts the truth of the assertion that the point of the organ corresponding to the centre of the optic nerve is insensible to light, and denies the authority of the experiment of Mariotte usually adduced in support of it. He takes what we think unnecessary pains to prove that the retina is not acutely sensible to ordinary impressions, though we are not aware that such was the commonly received doctrine. The retina is sensible to peculiar impressions, those of light, only; in general or common sensibility it yields to many other organs.

One of the most important of M. Magendie's experimental results consists in the influence, which he has proved, of the fifth pair of nerves over the function of vision. The section of one or of both nerves produces blindness on one or both sides. In the first confusion of ideas, produced by this unexpected result, he was inclined to believe that the fifth pair was in fact the true organ of vision, and that physiologists had been deceived in the office they attributed to the first pair. A further experience, however, convinced him that blindness was equally produced by dividing the optic nerve at its entrance into the eye, and that in this case the insensibility to light was still more complete than in the other. On this point, however, M. Magendie makes two inconsistent assertions within the compass of a few lines. He first assures us, that the light of day, even when concentrated by a powerful magnifying glass, makes no impression on the retina of an animal in whom the fifth pair of nerves has been divided. He makes a similar statement as regards the retina when the optic nerve is divided, and then proceeds to say,—"I applied the same test," (the concentration of solar light by a magnifying glass), "to an animal in whom the fifth pair alone had been divided, and clearly distinguished, by the closing of the eye-lids, that the eye was impressed by the rapid change from shade to the direct light of the sun; consequently, that the sensibility of the retina is not totally destroyed by the section of the fifth pair." p. 84. vol. 1.—In the previous page, after stating the division of the fifth pair, he says—"La lumière du jour, ni même une lumière artificielle très fortes concentrèe avec une loupe, ne donnent plus aucun indice d'impression."

Hearing.—The sensibility of the auditory, is of the same kind with that of the optic, nerve, viz. special, and related to a pe-

culiar set of impressions: it may be touched, pricked, or torn in animals without producing any expression of pain.

The membrana tympani, and the apparatus of bones connected with it, serve to transmit the vibrations communicated to it by the atmosphere, in a manner which has been best explained by M. Savart—According to him—

"When a delicate membrane is very tense, it vibrates with difficulty, *i. e.* the extremes of its vibration are confined within very close limits; when the membrane is relaxed, the reverse is the case: and as it is proved by direct experiment that the membrana tympani, *in situ*, vibrates in consequence of the sonorous undulations conveyed to its surface, there can be no doubt that the limits of its vibrations are diminished in proportion to its degree of tension. It is, therefore, extremely probable that it is relaxed for receiving weak or pleasing sounds, and becomes tense when they are too powerful or disagreeable." p. 118. vol. 1.

Beyond this, little is known of the offices of the numerous and complicated divisions of the ear, both internal and external. In the same manner as vision, the function of hearing is probably influenced by the fifth pair of nerves, although it is less easy to distinguish the extent of this influence. When the fifth pair is divided or diseased, hearing is imperfect, and often altogether destroyed.

Smelling.—This sense differs from those of sight and hearing in one important particular, viz. in the absence of any parts serving the purpose of modifying external impressions previous to their coming in contact with the nerve, which is the essential part of the organ.

Although the results of comparative physiology afford strong confirmation of the opinion that the extent of the different sinuses, and of the surface of the internal parts of the nose in general, is commensurate with the degree of perfection in which the function exists, it must be considered as a singular fact that no filaments of the olfactory nerve can be traced to the inferior spongy bone, to the inner surface of the superior one, or to any sinus. The pituitary membrane receives numerous and considerable branches from the fifth pair of nerves.

Like the conjunctiva, the general or common sensibility of the pituitary membrane is totally abolished by the section of the fifth pair; and still further, it becomes insensible to the most powerful odours, such as ammonia and acetic acid.

So far it would appear that the olfactory, is similarly circumstanced with the auditory and optic, nerves, and that the integrity of the fifth pair is essential to the performance of its functions. But the experiments of M. Magendie lead to further

conclusions, and would, *primâ facie*, appear to prove that the olfactory nerve was not the organ of smelling. When both nerves were destroyed in a dog, the animal was still sensible to powerful odours, (ammonia and acetic acid, we believe,) in the ordinary manner. With regard to weaker smells, of food for instance, M. Magendie was not able to procure any results sufficiently decided to enable him to affirm that they were perceived by the animal. An explanation of these apparent anomalies has been offered, by supposing that ammonia and acetic acid, acted upon the common sensibility of the organ, and that, consequently, they continue to produce impressions after the olfactory nerve has been destroyed. The latter part of M. Magendie's statement amounts to a tacit confession that under similar circumstances the sensibility to odours, properly so called, is totally lost. He contents himself by suggesting with less confidence than he at first exhibited, that it is possible that the olfactory nerve may not be the organ of smelling, and that the olfactory may be confounded with common sensibility in the same nerve. We must not, however, deny him the merit he deserves for having proved the great and unsuspected influence which the fifth pair of nerves exerts over this as well as the other senses.

Taste.—The recent progress of physiology has established that the lingual nerve is the principal organ of this sense.

"When the lingual nerve is divided in an animal, the tongue retains its power of motion, but loses its susceptibility to tastes, which still, however, continues unimpaired in the palate, the gums and the inner surface of the cheeks. But if the fifth pair of nerves be divided within the cranium, the power of distinguishing the tastes of bodies, however acrid or caustic, is lost in the tongue, the lips, the cheeks, the teeth, the gums, palate, &c."

With relation to sensation, M. Magendie divides nerves into two classes, viz. those that are sensible, and those that are little, if at all so. Of the former kind are the superior branch of the fifth pair, which gives sensibility to the skin and to the mucous membranes of the anterior part of the head; the nerves resulting from the union of the posterior roots of the spinal nerves; the eighth pair, which presides over the sensibility of the pharynx, œsophagus, larynx, and stomach; and the sub-occipital, which imparts sensibility to the back part of the head.

The nerves which are comparatively insensible, are the optic, olfactory and auditory; and in different degrees the third, fourth, and sixth pairs, the facial, the hypo-glossal and the anterior branches of the spinal nerves.

M. Magendie adheres too closely to the dictates of observa-

tion and experiment to allow him to attach any confidence to the hypothetical functions often attributed to the sympathetic nerve. We think, however, that he carries his scepticism to an unnecessary and unjustifiable extent when he questions its title to be considered as a nerve. We will quote his own expressions:—

"The ganglia and the filaments proceeding from them have no analogy with the nerves properly so called. Their colour, form, consistence, disposition, structure, physical and chemical properties, all are different. The analogy of their vital properties is not greater; a ganglion may be pricked, cut, or torn away without causing pain to the animal; whilst similar operations on the cerebral nerves produce extreme suffering. The removal of all the ganglia of the neck, and even of the first thoracic ganglia, produces no sensible or immediate derangement of function in those parts even to which their filaments may be traced. What reason, therefore, have we to consider the ganglionic as a part of the nervous system? Would it not be more judicious, and more useful to the progress of physiology, to admit that the uses of the great sympathetic are at present quite unknown? The perusal of all that authors advance on this point, will tend to confirm us in this idea; each has a peculiar opinion. We find the ganglia considered as nervous centres, as little brains, as nuclei of grey substance, serving to reinforce the nerve, &c. But if we look for the proofs on which these doctrines are established, we are astonished to find that there are none, and that these assertions are a mere play of imagination."—vol. 1. p. 172.

In noticing the connexion of the brain with sensibility, M. Magendie gives a convenient summary of some of the most remarkable experiments lately performed on the brains of animals. They authorise the conclusion that the seat of sensibility is not in the brain proper, nor in the cerebellum, but in the posterior columns of the spinal marrow and the superior divisions of the fifth pair of nerves. Though the removal of the hemisphere of the brain and of the cerebellum does not annihilate the action of the senses in general, vision presents certain exceptions and anomalies. The removal of the hemisphere on one side annihilates vision on the opposite, and *vice versâ;* a fact which M. Magendie at first doubted, but has since established by numerous repetitions of the experiment. A similar effect is produced by injuries of the optic thalamus, viz. loss of vision in the opposite eye. In birds, though not in mammalia, the same effect ensues on injuries of the anterior of the corpora quadrigemina.

"Thus, the parts of the nervous system necessary to the exercise of vision are numerous: for this purpose is required the integrity of the hemispheres of the optic thalami, probably of the anterior of the corpora quadrigemina, and lastly of the fifth pair of nerves. It is to be re-

marked, that the influence of the hemispheres and of the optic thalami is on the eye of the opposite side, whilst that of the fifth pair is direct." —p. 200. vol. 1.

M. Magendie is no disciple of the phrenological school: he dismisses the subject in a note, by saying that he considers it as a pseudo-science, such as astrology and necromancy were formerly. So much have times changed, that we suspect the tide of public opinion will be found to set in an opposite direction.

Muscular Motion. In some recent experiments on the nerves distributed to muscles, MM. Prevost and Dumas have discovered that when magnified 10 or 15 times, their surface presents alternate white and dark stripes, produced by the folds of the cellular envelope preserving its transparency in one part and losing it in another. The proof is, that this appearance ceases when the nerve is moderately stretched.

They have also given the most satisfactory description of the method in which the nerves of muscles terminate. They are neither confounded with nor expanded in the muscles, but form loops, passing from one nerve to another, so as to ascend towards the brain after having traversed the muscle. According to them, each nervous fibre has one extremity in the anterior part of the spinal marrow, enters a muscle as part of a nervous trunk, traverses one or more muscular fibres, and then proceeds within another nervous trunk towards the posterior part of the spinal marrow.

The muscular fibres, examined with a weak magnifying power, are straight and parallel while the muscle is in a state of rest. During the state of contraction, the fibres are bent in zig-zags, presenting numerous angular and regular inflexions. The flexions of each fibre take place at certain determinate points exclusively, and the angles of flexion in the most powerful contractions never reach the extent of 50°. It is particularly important to observe that the nervous filaments which traverse the muscular fibres, pass precisely through the points at which the angles of flexion take place, and in a direction perpendicular to the course of the fibres.

The same gentlemen have also satisfied themselves, that the muscular fibre when in this state, of angular inflexion (zig-zag,) is not shortened; and thus, that in the state of contraction (of the muscle) the extremities of each fibre are approximated, but that the length of the fibre itself is not diminished. They have obtained this result as well by direct measurement of the fibre, as by measuring the angles.

Digestion. M. Magendie retains his former opinions as to

the influence of the eighth pair of nerves over the conversion of food into chyme. He accounts for the apparent interruption of the function, by supposing that it depends on the diminution or cessation of the secretion of gastric juice, without admitting, however, the abolition of the power of chymification in the stomach. A share of the disturbance thus produced he also attributes to the disturbance of respiration—circulation succeeding to the section. He again refers with this view to an experiment, the practicability of which, some in this country have denied. It consists in dividing the nerves, not in the neck, but within the thorax immediately above the diaphragm. He cuts through one of the sternal ribs, ties the intercostal artery, and introducing his finger into the chest, raises the œsophagus and the nerves on its surface, and is thus enabled to divide all of them with certainty. He has satisfied himself that in animals thus treated, chymification takes place, and chyle is formed in abundance.

He does not appear to put any faith in Dr. W. Philip's statements of the efficacy of galvanism in carrying on digestion when the eighth pair is divided.

After noticing Mr. Brodie's experiment, in which the ligature of the common biliary duct prevented the formation of chyle, M. Magendie states that he has repeated the experiment with a different result. Most of the animals on whom it was performed died of the effects of the operation; but in two, which survived a few days, he assured himself that digestion continued, that chyle and fæces were produced.

We need not enter into the question as to the agents of absorption, whether lymphatics or veins, as it appears now to be pretty generally admitted that the modern experiments have set the question at rest by proving that the veins certainly do, and the lymphatics probably do not absorb. M. Magendie wishes to reduce absorption to little more than a purely physical process, the result of imbibition into the various textures to which the substance to be absorbed is applied. He has proved, by numerous and decisive experiments, that imbibition actually takes place not only in the living, but in the dead body; though we can hardly think him justified in referring all the phenomena of absorption to this head. One very decisive experiment was performed on a dog six weeks old: one of the jugular veins was exposed and isolated in its whole length, by taking away its cellular connexions and placing it upon a piece of card, so as to prevent its coming in contact with the surrounding parts. A thick aqueous solution of extract of nux vomica was then dropped on the surface of the vein, so as not to touch any other part, the circulation in the vein still continu-

ing. Before four minutes had elapsed the effects of the poison began to display themselves, at first feebly, but afterwards with such energy as to render artificial respiration necessary in order to prevent the death of the animal.

Circulation.—Under this head we find some interesting facts derived from the experiments of MM. Prevost, Dumas, and others. It is remarkable that the improvement of chemical analysis has led to the detection of the elementary materials of all the structures of the body existing in the blood. MM. Vauquelin and Chevreul have found in it a peculiar fatty substance containing azote, and identical with that found in the nervous system. MM. Prevost and Dumas also, have discovered urea in the blood of animals from whom the kidneys have been removed. We find also fibrine and albumen, which form the muscles and the various membranes; phosphate of lime composing the bones; the yellow colouring matter of the bile, &c.

As to the blood globules, the observations of M M. Prevost and Dumas coincide in the most important points with those of Lewenhoeck and Hewson.—The globules exist in all animals. With a weak magnifying power they appear as black points: when magnified in a higher degree, they appear as white circles with a black spot in the centre, which becomes illuminated when the magnifying power is still farther increased. The appearance and the diameter of the globules are the same both within and without the vessels. They do not possess any rotatory motion, but simply follow the course of the circulating current. They are flattened, and are seen presenting themselves in various directions, sometimes with one edge, sometimes with a flat surface, and sometimes slowly turning over. Their passage may be distinctly traced from the arteries to the veins running through the circles by which the two sets of vessels anastomose. Subsequently to the Memoir which they published on this subject, MM. Prevost and Dumas examined the lung of a Salamander, with a power magnifying 300 times. At first the globules move with such velocity as to produce the idea of vertigo: gradually the circulation becomes slower; the globules glide along in the liquid in which they are suspended; they creep through the ramifications of vessels, become elongated when the space is narrow, and often remain fixed until forced on by the effort of those accumulating behind them. Sometimes a globule is impacted against the ridge separating two ramifications, accommodating its shape to the form of the obstacle, and oscillating, often for some minutes, before it is forced into the vessel on the one or other side by the preponderance

of other globules impinging against it. These facts established their opinion that the globules are hollow bags, an opinion which had also received the sanction of Hewson. In the human subject they have found them to be nearly $\frac{1}{4000}$th of an inch in diameter, and that with great constancy, in a state of disease as well as health.

We are obliged to omit numerous details which merit attention, but which it would be impossible to abstract, even did our limits permit it. We have contented ourselves with selecting a few points of general interest, on which it is desirable to have the opinion of a physiologist so accomplished as M. Magendie. It is unnecessary that we should take the pains of pointing out his merits, which are so generally known and admitted, or to dwell more particularly on the vigour with which he has submitted doctrines both new and old to the test of experiment.

Several English translations have appeared of M. Magendie's work, two in this country and one in America. Of these we understand Dr. Milligan's has been the most popular, and in the edition now before us—besides the author's own additions, we have a considerable number of vuluable notes by the Translator. As specimens of these, we shall give the following extracts:—

Adaptation of the Eye to Distance.—"It is nothing singular to find our well informed author ranging himself with almost the whole host of physiologists in maintaining, that an adaptation of the eye to the distance of the object is necessary, in theory at least, to distinct vision. This notion, of which we shall endeavour to demonstrate the fallacy in a few words, has evidently been derived from the changes which are observed to take place when the image of a candle passing through a single lens is received upon a plane. But, though the light of a candle may soon be withdrawn to a distance so great, that its diverging light does not much surpass in intensity its parallel light, nor even the light thrown into the unprotected lens, or the recipient surface, from illuminated objects around; so that the formation, or, at least, our perception of a distinct image, becomes impossible: the case is far different with the human eye. The human eye is not a mere plane, furnished with a lens set at a definite distance before it, and which, by receiving light from all the hemisphere around it, can only exhibit an image transmitted by its lens, when that image is more intense than the light already on its surface. The human eye is a camera obscura, and, like it, receives the image of every object accurately at every distance. If, in these latitudes, we turn the lens of the camera obscura to the south, that is, towards the region of most intense light, the images on its table disappear: Why? Merely because a light stronger than that which formed the picture is now reflected from the table, and, by its superior intensity, takes the place of the picture in our eye, but does not

at all efface the picture on the table; it merely renders it invisible to us, as the sun does the moon and stars in the day time. If, by descending into a deep pit, we withdraw our eye from his rays, the stars again appear in all their glory: by revolving the lens of the camera to the northern aspect, the pictures are again seen on the table as fresh as ever. Even the intense image of a candle formed upon paper by a convex lens, is effaced by another candle held near it. The eye, and the camera obscura, are defended from the influence of external light, and it is this defence which constitutes nearly the whole difference of their phenomena from those of the naked lens.

1. This being premised, let the reader imagine a body, as an arrow, placed at the distance in which its image is distinctly formed on the retina, by concentration of some of its rays. Next, let it be removed to any distance from the eye,—say double. It is evident that many of the rays of the pencil that were concentrated into the focus in the last image cannot now meet in that focus again, since their angle of incidence at the lens is now entirely changed; but affecting a more distant focus, they will illuminate the image and the space around it, and thus render it indistinct: and if no other rays issued from the arrow, it would now be scarcely visible. But an infinity of other rays flow from the arrow in all directions, and consequently there will still be found a sufficient number of its rays which form the same angle of incidence with the lens, as many of the rays of the former pencil did; and consequently are concentrated, as before, into the focus upon the retina, there to constitute an image of the arrow perfectly similar to the former, but fainter in the duplicate ratio of the distance. But independently of the oblique rays, there is always an image formed exactly upon the retina by the parallel rays, namely, by those rays which flow from the surface of every visible object in a direction parallel to each other, and either perpendicular or oblique to the segmental plane of the cornea. By an easy, obvious computation, from the table we have given of the dimensions, &c., of the parts of the eye, Martin has demonstrated that these rays must always form an image exactly upon the surface of the retina, whatever be the distance of the luminous object. (Ph. Br. ii. 255.) In all considerable distances, the two images thus formed, by the parallel and oblique rays respectively, will coincide, in size, form, and colour. Nay, there is a third image which would be formed equally on the same point of the retina, if the lens were totally removed; it may be called the image of aperture. This image takes place in the camera obscura, or in any dark chamber facing to the north, and furnished with a small aperture to admit the light, the pictures of external bodies being thereby formed only a little less distinctly than when transmitted into it by a lens. The lens, by concentrating the light, merely increases the intensity of the image seen in the camera obscura, and adds a few cross rays, which would otherwise have been lost to it. Now, as the eye is a perfect camera obscura, all these three images must be taken into account in considering the effect of distance upon the visual image; for though the lens certainly modifies the parallel and

apertural images, they obey peculiar laws, frequently beyond the reach of its influence. Nay, it must now be asked, whether the apertural image may not before, as after cataract, be sufficiently modified by the variations of the pupil to answer most of the purposes of vision? whether the image at the bottom of the eye be not always, as Martin thinks, the parallel image? or rather a compound of the parallel and the diverging! It must be observed that, in a pencil of diverging rays, there are rays of every possible angle of incidence, from the extreme ray to the perpendicular itself; and that as this must be the case at every distance, till optical infinity, when they become parallel, every distance has the means of forming a sufficient image at the same focal distance; and that though mathematicians have not erred in their theorem (Simpson's Algebr. 312.) for finding the focal distance for a single oblique ray, which they conceive to recede along the visual axis, yet physiologists have been greatly mistaken in their application of this conclusion to a body which emits many pencils making the same progress, and transmits its rays through a contractile aperture into a camera obscura. The argument holds for any other distance; and it is clear that the eye, independently of all adaptation, receives a perfect focal image of every object at every distance. What then is the use of adaptation?

2. M. Magendie's experiments, as he confesses, prove that this is actually the case in the human eye, namely, that the image is alike perfect at every distance, though not alike luminous.

3. In the camera obscura, the images are all perfect, though luminous in the sub-duplicate ratio of the distance: yet in that instrument no adaptation is ever employed. That on the Calton Hill of Edinburgh shows objects distinctly for many miles around.

4. When we want to see an object distinctly, we bring the eye nearer or farther from it, according to its degree of illumination; whereas, if the eye had in reality the power of accommodation ascribed to it, we would surely employ it on such occasions to save ourselves all this trouble; nay more, that effort which has been mistaken for it, is really employed, at least as far as the muscles are concerned, at the same time that we advance or recede.

5. When we look through a card perforated by two holes, we see the object only at the point of distinct vision, but double at every other single distance; thus clearly showing that there is a certain and definite distance at which the eye can see distinctly, but that the eye possesses no power of producing this distinct vision when the object is placed at any other distance.

6. Even the contraction of the pupil, though it assists our vision of distinct objects, is not absolutely necessary, since Daviel has shown that patients having the pupil immovable see well enough.

7. Persons who have had the lens removed for cataract, still see sufficiently well; though it is evident that in them any apparatus of accommodation adapted to the action of the lens must be useless; and we cannot grant an apparatus for changing the other parts, which are so inefficient while the lens is present in the eye.

8. The effort (*Young Nat. Phil.* i. 450,) by which the eye is supposed to see distinctly, is nothing foreign to the effort we employ when endeavouring to hear or feel distinctly: we direct the mind to the part, or, to be less figurative, we endeavour to attend exclusively to the sensation present in the eye, which is thus rendered more perfect, merely by the exclusion of other previous or contemporaneous sensations for the time. The proof of this is clear: we employ the same effort in looking at the stars, which send only parallel rays; we employ it energetically, though quite fruitlessly, to behold objects placed within the nearest limit of distinct vision; and when we find we cannot help ourselves, we resort to glasses, or withdraw the head to a proper distance. On the whole, unprejudiced consideration of the above will show that theory, experiment, and observation, are decidedly hostile to the theory of adaptation; and that philosophers have clung to this venerable bubble as they long did to their beards, from a seemingly systematic aversion to every thing common or familiar. They must have known that long since the immortal Haller had boldly exposed its nakedness; but he seems either to have been little read, or not to have been understood by many of his successors. *See* v. 516 *of El. Physiol* *."

Contractility of Arteries.—"I remember to have read in the journals, a very warm discussion of this point, maintained between Dr. J. Johnson and my excellent friend Dr. Hastings of Worcester. I confess, however, that though impressed with the highest respect for the talents and zeal of both parties, I never could see how their machinery was to be applied to the human body; since both parties were bound by their hypotheses to admit, at least, the irritable or contractile power of the heart, and also of the capillaries, neither of which could therefore, by any means, be represented in their apparatus. Neither Dr. Johnson nor Dr. Hastings could have any other object than the service of truth, and the numerous writers who have arranged themselves on the respective sides of this great controversy respecting arterial action, are entitled to the same credit; their multitude being only a proof of the importance and difficulty of the question. The student, probably, will be more apt to take a side, than to sit coolly down, declaring the point indeterminable; and I have drawn up the following synopsis of the arguments, for and against the contractility of arteries, that he may choose none of the three opinions, which are equally to him, empty-handed.

"ARGUMENTS FOR AND AGAINST THE CONTRACTILITY OF ARTERIES.

1. The arteries are productions from the heart, which is distinctly muscular.	1. The aorta arises by a peculiar cartilaginous ring from the ventricle.

* Since the publication of the above, a paper has appeared in Magendie's Physiological Journal, by a Russian astronomer, who attempts to establish the non adaptation of the lens upon mathematical calculation.

2. Fetal circulation has been supported by arteries alone, when the heart was wanting.

2. Monsters prove nothing.

3. In many of the worm tribe there is either no heart, or the heart is an artery, yet in these circulation goes on.

3.

4. Verdschuir and Hastings have seen all the arteries contract on the application of a stimulus; and most unprejudiced writers, as Haller, and Bichât, admit of this property in the capillaries. Now, as a capillary has no distinct beginning, it seems but fair to extend the property to the whole vascular system.

4. Many eminent anatomists deny the fact; even Haller denies it in the larger vessels.

5. A large artery, if cut, can be felt contracting on the finger: as in the shark.

5. The cut artery contracts from mere organic contractility; indeed for the same reason as it retracts.

6. The fibrous texture, so common to muscles, can easily be pointed out in arteries.

6. Fibres are no certain proof of muscularity.

7. Arteries are richly furnished with meshes of nerves; if not for contraction, what is the use of this apparatus?

7. Cartilages have nerves, but do not therefore contract.

8. When an artery becomes ossified, the circulation below it stops.

8. Bichât's experiment of inserting a glass tube.

9. In paralysis, the force, and often the number of the pulsations of arteries in the affected side is diminished. Now this is just what happens to muscles, voluntary or involuntary, from the same cause, and cannot be explained in any other way; for relaxing tubes not contractile, ought to permit a larger wave of blood to enter.

9. Arteries denuded exhibit no pulse, yield no feeling of dilation; while veins subjected to artificial varicose aneurism pulsate, and not before. Adelon, iii. 385.

10. In apoplexy, the whole circulation is affected, and often becomes extremely irregular in its distribution.

11. Topical congestion from any cause, as stimulation, friction, blushing, lascivious ideas, &c.,

10, 11, 12, &c. The supposition of "An organic or vital contractility" of the middle tunic of the artery, reduces the question to the simple form of, whether the arterial tunic be a new solitary tissue *sui generis*, possessed

must always arise from an action in the vessels of the part affected. Indeed, all medicine, except the exhibition of general stimulants, is founded on this fact; since almost every class of medicines acts by determining an increased action of the vessels of a given organ.

12. The removal of topical congestion, or plethora, by remedies, proves the same thing.

13. The lymphatics, a system very similar to the arteries, contract distinctly on the application of a stimulus.

† 14. Certain mechanical irritations of the brain, spinal cord, or nerves, modify the circulation, and differently in different parts.

† 14. The passions affect individual secretions, as the tears, which are furnished by certain arteries.

15. The ligature of a nerve lessens the secretion of the gland to which it goes.

16. Hemorrhages are daily stopped by the application of stimuli, and as effectually, as by tying the artery.

17. The arteries are found empty after death. If they are not contractile, what empties them?

18. When the aorta has been tied below the heart, the arteries are still found empty.

19. The force of the blood in the smallest arteries: the pulse.

20. An artery included between two ligatures pulsates: and when first exposed to the air, contracts half its diameter.—*Tiedemann versuch.* 12. p. 33.

of irritable properties; or only a tissue already abundant in other parts of the system, and known to be characterized by contractility, namely the muscular. *In the present state of general anatomy, this question must remain undecided, though probability seems much in favour of the widely diffused, and as widely modified, muscular tissue.*

13. The lymphatics resemble veins rather than arteries; resemblance is no proof.

17. The arteries are emptied after death by the power of the heart.

18. They are emptied by organic insensible contractility.

19. Parry has proved the mechanical origin of the pulse.

20. Lamure was mistaken in the experiment of including an artery between two ligatures; the vessel merely undergoes a local displacement.

N.B.—Adelon admits a contractility in the arteries, though not muscular; but which he chooses to call "en quelque chose organique et vitale." Though these two qualifications are none of the plainest, we earn by them that the arterial is a contractile tissue, *sui generis.*"

† So in the Book. Editor.

ART. IV.—*Philosophie Anatomique des Monstruosités humaines contenant, une Classification des principaux genres, une Histoire raisonnéé de la Monstruosité et des faits primitifs qui la produisent, &c. &c.* Par. M. le Chevalier GEOFFROY SAINT HILAIRE.

Observations Pathologiques propres à eclairer plusieurs points de Physiologie. Par LALLEMAND, Professeur de Clinique Chirurgical à la Faculté de Montpelier, 1825.

The investigation of the causes of monstrosity in animals is beset with many difficulties, some of which seem altogether inextricable in the present state of our knowledge. It includes a consideration of the mechanism of generation, a knowledge of the series of changes through which the new being passes to the completion of its development; and finally, the relation between this being and its parent, during the period of utero-gestation, and the accidental influences to which it is occasionally exposed. To enter on each of these topics would lead us too far away from our present undertaking; we shall, however, briefly allude to some of the hypotheses that have been devised to explain the occurrence of these anomalous productions; in doing so we propose to follow M. Geoffroy Saint Hilaire, as our object is, not to attempt an essay, but to give a condensed analysis of his work.

"In former times (says our author, p. 478) when man was believed to be influenced and guided by invisible spirits, monsters were supposed to be produced by supernatural agency. Whenever a deformed infant was born, even in the most civilized places, such as Rome or Athens, the inhabitants of these cities, so justly proud of their intellectual superiority, assembled in their temples to endeavour to appease the anger of the gods. But though in process of time reason got the better of these superstitious notions, it only shook off one error to light on another. Even so lately as the time of Ambrose Paré, the birth of a monster was looked on as a public calamity—a presage of a war or a famine, and even more near to our times these deformities were considered altogether beyond the reach of our scrutiny."

A conviction such as this could not long have retained its influence. The active spirit of man will always prefer an hypothesis, however gratuitous, to total inaction. Accordingly we find that several attempts have been made to explain these productions. One hypothesis was founded on that doctrine of generation, which assumed the pre-existence of germs; another, on the influence of the mother's imagination; a third, which has

obtained the most general assent, ascribed them to the influence of accidental causes acting on the creature during its fœtal state. The first hypothesis (the pre-existence of defective germs) supposes that the deformity existed from the beginning of time, and was transmitted as such from generation to generation. This is not merely a gratuitous supposition, it is a contradiction in terms; a germ to be pre-existent must, if words have any meaning, imply that it existed either before something else, or before itself; if the latter it is a palpable absurdity. We can, however, conceive that a germ may be altered or deranged, before it is subjected to the influence of fœcundation, as it forms part of a living being, it may suffer a change of its texture then as well as at any subsequent stage of its development or existence; but this by no means implies the admission of an original monstrosity in the germ, it merely allows a more extended operation to those accidental causes which, as all must admit, exert an important influence on the new being during its fœtal state. We cannot then admit any original condition of the germ as being necessary to the production of a monster. The ovum at the moment of conception starts into being not only with a susceptibility, of a regular and natural development, but has impressed upon it those requisites which will enable it to go through its usual course of transformation, unless some accidental causes interfere to retard or derange its development.

That the imagination or mental emotions of the mother can exert such an influence on the development of her infant as to change its conformation, is an opinion long since relegated to the vulgar. It is true it was once very generally admitted by the learned, and still constitutes the popular belief. As Legrange somewhere pertinently said, "the prejudices of the vulgar are but the cast clothes of philosophers." We allude to it here merely because our author has adduced rather a novel argument against it, founded on the registers of births, taken on a large scale.

"In 1821, 25,156 children were born in Paris, of these 15,980 were legitimate, 9,176 illegitimate, being nearly as 5 to 3. Of the latter, probably about 2000 were pregnant for the first time, and as may be supposed a great number of these were placed by seduction in most distressing circumstances, and subject to every depressing passion during that pregnancy; yet if we compare the deviations from usual conformation that occurred in these two sets of persons, we shall find so little difference that we must look on it as at least presumptive proof of the little influence of mental emotion in producing monstrosity."—p. 506.

Previous to giving his views concerning the production of monsters, M. G. St. Hilaire proceeds to arrange all the speci-

mens which he had an opportunity of examining himself, or could find detailed in the works of others, conceiving that a consideration of their characters has enabled him to point out the true principles on which their classification should be founded.

"Bonetus and Blumenbach divided them into four classes, as follows: monsters presenting an excess of parts; those with a deficiency; those in which some change had occurred in the structure of parts; those with invertions in their situation. Meckel adopts this arrangement, merely adding another section to include hermaphrodites."—p. 111.

It is easy to perceive that this arrangement is altogether defective, and can throw no light on the origin or nature of these deviations from usual conformation. It proceeds on the assumption that they form a class apart, and as such are incapable of being subjected to the rigorous methods of classification adapted to regular forms. To M. G. St. Hilaire then, is justly due the credit of being the first who has perceived that these different productions present characters as strikingly distinctive, in a zoological point of view, as those which subsist between a mammiferous animal and a reptile, a horse and a crocodile. The human fœtus, it will be recollected, during its development, passes through a series of changes or transformations, each corresponding to some of the permanent states in lower animals. Thus, at first it is but a small bud or germ placed on a vesicle, just as we see in the simplest worms. It then becomes a filiform body without any appearance of head or limbs, as is the case in the Annelides; at a still later period its limbs are equal, and its tail projecting, as occurs in quadrupeds. Further if we take each system of organs separately, we shall find a similar progression. In the nervous system, the parts which first appear are the nerves and their ganglia, which correspond with the invertebrated animals that are supplied with distinct nerves; after this we distinguish the medulla spinalis, tubercular quadrigemina, and a mere rudiment of the brain and cerebellum, which is analogous to the conformation of the reptiles and fishes; finally, the latter parts increase faster than the tubercles, by which the brain is made successively to resemble that of the birds, and mammiferæ, until at last, by the expansion of the lobes of the brain and cerebellum, it acquires that complete development which characterises man. Now, if by any accidental cause during the progress of these changes, one or more of the systems of the fœtus be arrested or retarded, that which in the regular development is but a transitory state, becomes in this instance a permanent one, and when the creature is born, its conformation will

be found analogous to that of some one or other of the lower animals. These are the principles which the author of the "Philosophie Anatomique" has kept in view whilst examining those beings hitherto called monsters. It is by means of these data that he has succeeded in shewing satisfactorily that they are not the product of caprice, or the effect of a subversion of nature's ordinances, but that, on the contrary, their mode of existence is subjected to the same laws which guide the development of other beings reputed regular.

We shall now proceed to lay before our readers the classification which our author proposes, together with the names and characters of the genera which he seeks to establish.

" 1. *Coccycephalus.*—(The head presenting the form of a coccyx.)

A trunk without upper extremities, the bones of the skull and neck extremely small and contracted, the posterior ones being applied on the dorsal vertebræ, those of the vertex assuming the form of a bill or a coccyx.

2. *Cryptocephalus.*—(The head invisible externally.)

A trunk without extremities; head consisting of an assemblage of bony pieces, very small, invisible externally, surmounting a straight vertebral column.

3. *Anencephalus.*—(Head without brain.)

No brain or spinal marrow; face, and all the organs of sense natural; the skull open along the median line, and its two lateral portions everted, and separated like wings.

4. *Cystencephalus.*—(Head with a vesicular brain.)

Brain stunted in its development; its hemispheres superiorly resembling a nipple-like vesicle; the organs of sense and their cavities as in the preceding genus; the skull open, its occipital wings smaller and more approximated, the cervical vertebræ tubular as usual.

5. *Derencephalus.*—(Head with brain on the neck.)

Brain very small, resting on the occipital bones as well as on the cervical vertebræ, the latter open posteriorly, presenting also a spina-bifida—the organs of sense and bones of the head as in the last genus.

6. *Podencephalus.*—(Head with a brain on a foot-stalk.)

The brain of its ordinary size, but projecting beyond the skull, supported by a pedicle, which rises up beyond the summit of the arch of the skull, which consists of osseous pieces depressed upon one another, and so compact as to resemble ivory.

7. *Notencephalus.*—(Head with brain on the back.)

The brain of its usual size, the greater part outside the skull, forming a hernia through the occipital bones and foramen magnum, resting on the back, without contracting adhesions with it, enclosed within the common integuments; the parietal bones of the skull broad and elliptical, resembling in its conformations that of an otter—its parts are thin and friable.

8. *Hemiencephalus*—(Head with half its parts.)

All the organs of sense destroyed, traces or rudiments of them appearing on the face, still the skull and brain nearly natural.

9. *Rhinencephalus.*—(Head with nares projecting like a snout.)

A real cyclop, having two crystalline lenses, and but one optic nerve; one orbit, owing to the want of the intermediate partitions, and the removal, from the central line, of the bones of the organ of smell. These latter thus detached from the maxillary bones, are found above the eye grouped together, and prominent on the centre of the forehead. The nasal integuments attached to this root are prolonged in the form of a snout; the nervous system of the organ of smell is altogether wanting; the organ of taste and the maxillary bones are in their natural condition. This conformation at once reminds us of a similar one which is permanent in several animals, such as the elephant, tapir, some seals, and lap-wings, &c.; but in these this mode of organization is rendered persisting beyond the fœtal state by the addition of the olfactory nervous apparatus, which does not exist in the rhinencephalus.

10. *Stomencephalus.*—(Head with closed mouth.)

Cyclop; organization so far like the preceding; the non-development of the organ of smell extending also to that of mastication; maxillary bones rudimental; the lips drawn together and prolonged into a filiform projection, a sort of labial proboscis.

11. *Triencephalus.*—(Head deprived of three organs of sense.)

Spheroidal head; no face, owing to the absence of the organs of sight, smell, and taste; the ears united beneath, having but one auditory canal and one vestibule, bounded externally by two processes of skin. This deviation frequently occurs to some of the lower animals, as the cat and dog.

12. *Sphenencephalus.*—(Head presenting a remarkable sphenoïd bone.)

The skull bent at the palatine arch in such a way that the teeth of each side meet at the central line, the ears contiguous and joined together, having but one auditory canal, and one vestibule—the posterior sphenoïd bone having its external pterygoid wings joined together in nine-tenths of their length. This occurred in the skull of a sheep, but has not yet been found in the human species. Its great interest rests on the conformation of its posterior sphenoid bone, which, in this deviation from its natural condition, presents characters which are permanent in birds.

13. *Diodencephalus.*—(Head with a double range of dental bones.)

The intermaxillary bones occupy the first range, the proper maxillary bones articulate with one another form the lower range; this arrangement is permanent in the greater number of fishes.

"Thus a conformation which constitutes an anomaly in one species, is analogous to that which is the fixed law of another."—p. 99.

These principles are applicable not merely to the arrangement of the genea, they assist also in determining the different species."

"Those abstractions, which convey to the mind the systematic and ideal order of the relations of the different degrees of organization are

expressed in zoological language by the terms *species, genus, order, kingdom.* It is by a strict application of zoological rules that I have been enabled to assign the characters of different sorts of monstrosities, and refer them (after having examined their several conditions of existence) to thirteen genera, of which, as we have seen, the podencephalus is one. Now if any accidental cause should arrest the growth of an organ, the brain for instance, at or about the middle of the second month we shall have produced a monster of this sort,—a podencephalus: if it occurs before forty-five days, the brain is less developed; if after, more so. But the same disturbance occurring in an organ which can no longer develope itself concurrently with the other parts of the creature, and which therefore only slightly partakes in the vitality of the system, becomes the reason and cause of an organization which may always be produced under the same circumstances. We shall have the same basis of organization, but not the same being; we shall find merely those diversities which constitute the species of a genus.

"Thus the same elements, disturbed at a particular period of fœtal life, being joined to others in which the *nisus formativus* is not interrupted, give a uniform repetition of characters, and so constitute a *genus.* Each degree within this produces those more restricted characters which mark a *species*, whilst the same age or degree, producing a repetition, in every particular, of the same forms, allows us to seize those slight shades which distinguish the *individuals* of the same species. It is by these principles that I have established the four species of the podencephalus, viz. *podencephalus eburneus, podencephalus longiceps, podencephalus illustratus, podencephalus biproralis.* I have arranged them according to the order in which their deformities occurred, or rather the periods in which each sustained its special deviation from regular conformation; the *eburneus* being affected sooner, the *biproralis* later."—p. 450.

The peculiar views of M. Geoffroy concerning the productions of monsters, will, we conceive, be more readily understood if his reasoning be made to bear upon a particular case. For this purpose we shall select that which is reported by Lallemand, both because it is the most complete statement on record, and also because it affords us an opportunity of contrasting the opinions of this distinguished pathologist with that of M. Geoffroy.

"A woman, 46 years old, pregnant for the sixth time, was admitted at the Hotel Dieu. The five previous births were natural, the children healthy and well formed. Her health had lately been much impaired, having become emaciated and dropsical. Two days before her delivery, she distinctly perceived the motions of the fœtus, but they seemed more feeble than during her former pregnancy. She considered her time to be about the eighth month; the delivery was uncommonly rapid, owing to the depression of the vault of the head, for there was

neither brain, cerebellum, nor spinal marrow. The infant was a male, the flesh firm, the skin and cuticle healthy; the chest, abdomen, and extremities were shorter, but more bulky, than usual, owing to the deposition of a great quantity of firm subcutaneous fat. The testicles were near the ring, just ready to descend into the scrotum; all the parts of the face were greatly developed, particularly the lower jaw, which projected considerably beyond the upper. The face was turned directly upwards; the head terminated abruptly at the eye-brows; the bones of the skull, depressed towards its base, or drawn to each side, formed a flat surface continuous with the posterior surface of the vertebral column. The depression of the frontal bone caused the eyes to appear as prominent as in the batrachian reptiles. The integuments of the skull were covered with thick hair, which extended from the fore-head to the middle of the back; continuous on each side with the skin on the neck and back, it left internally towards the central line a large oval irregular interval, in which it was altogether wanting, its place being supplied superiorly by the remains of the arachnoid and pia mater, and all along the vertebral column by the dura mater of the medulla spinalis, which, instead of forming a cylindrical cavity, was drawn to each side in the same way as the spinous processes of the vertebræ. There was therefore, properly speaking, no vertebral canal nor cranial cavity. The membranes and skin were joined together by old adhesions, or rather by a cicatrix. *The remains of the arachnoid and pia mater formed beneath the base of the skull a sort of hood, which descended along the back;* beneath these were found some detached portions of brain, quite unconnected with any nerves. All the cranial nerves were free and floating at the base of the skull; but when traced onwards, were found perfectly regular, and distributed in the usual way. On the surface of the dura mater lining the vertebral column, was observed a double row of white tubercles, about the size of a pin's head, which were found to be the termination of the spinal nerves. When examined, their distribution was perfectly regular. As to the skeleton, the derangements in its ossification were confined to the skull and spinal column, the parietal and frontal bones which form the arch of the head being but a few lines in breadth, stood right upwards, instead of arching inward; and the spinous processes of the vertebræ, comprising even those of the sacrum, were separated so as, instead of a complete canal, to form a shallow groove—moreover the bodies of the seven upper dorsal vertebræ were separated, so as to leave between them an elliptic space, sufficient to contain the extremity of the finger."—Lallemand, p. 52.

Lallemand having examined this case with the most scrupulous attention, recurred at once to those which are recorded in books. He there found that Morgagni and Brunner were of opinion that, in all those cases in which the brain, cerebellum and medulla were wanting, there is sufficient reason to think that these organs had existed, but were destroyed by dropsy of the brain

and spinal marrow. He then reflected on his own case, and taking into account the cachectic state of the mother of the infant, he concludes, "first, that the fluid in the medulla spinalis is the result of a similar effusion in the ventricles of the brain; 2d, that this effusion is the real cause of the destruction of the medulla; 3d, that the origin of these derangements may sometimes be traced to the nature of the materials which the fœtus receives from the mother"—p. 61.

M. G. St. Hilaire has succeeded fully, at least in our opinion, in shewing that Lallemand's conclusions are by no means tenable; and having done so he proceeds to give that explanation of the phenomena which seems most comformable to the facts of the case, as well as to those general laws which are known to influence the development of the fœtus.

In the first place, a fluid may remain for a considerable time in contact with the cerebral substance without producing its destruction or absorption, as in cases of hydrocephalus; but even if it did cause the removal of the soft parts, there seems no reason to suppose that it could produce the same effect on the bones and hard parts; besides, the margins of bones subjected to the process of ulcerative absorption are rough, and shew evident marks of being as it were corroded, whilst in acephalous cases they are found smooth and rounded. Lallemand seems to have been fully aware of these objections, but he seeks to explain them away by supposing that in ordinary cases of hydrorachis the effusion is poured into the cavity of the arachnoid membrane, whilst in the cases now under consideration the effusion takes place into the *substance* of the medulla spinalis and cerebrum itself.—But if to support the hypothesis that the parts are removed by absorption, it is necessary to suppose that the fluid is effused into the substance of those parts, and not merely placed in contact with them, by what process can we suppose that an effusion can take place into the texture of the bones, and cause the removal not only of their lateral processes, but even of part of their bodies, so as to produce a fissure penetrating their whole substance?

This mode of considering the subject it is needless to repeat is altogether abandoned by M. G. St. Hilaire, and after minutely describing the dissection of a case nearly similar to that which we have transcribed from Lallemand, he proceeds to give what seems to him the true rationale of the phenomena. In these cases the vertebral canal is open along the median line, the lateral processes being separated and everted so as to form a plane surface instead of a tube. In the ordinary situation of these parts the canal is lined by three membranes, of which the dura mater is

placed externally, the pia mater internally, and the arachnoid between them; in the cavity thus formed is contained the spinal-marrow. Now, whenever the bones suffer any change of position, the soft parts are affected by it in consequence of the intimate union which subsists between them; hence when we find the lateral processes of the vertebræ separated and everted, we should be prepared to expect that every other part of the vertebral canal has sustained a similar alteration. This fact is established by a careful examination of acephalus cases; the pia mater instead of constituting a tube or canal is spread out in the form of a flat surface, and instead of being the most internal of the three membranes is found to be altogether external. In the natural state, the object contained within the canal formed by the pia mater is the medulla spinalis; hence a consideration of the connexion established between these parts should dispose us to expect that any rudiment of medullary substance that may exist in acephalous cases, would be found on the surface of that membrane. In this situation, however, we find a quantity of fluid enclosed in a membranous sac, resting upon the everted pia mater, and this fact at once prompts us to inquire, is this fluid the product of disease, or is it the rudiment of and substitute for the proper medullary matter? This latter opinion is sought to be established.—p. 149.

"The brain and spinal marrow in every instance present at their commencement those characters which are permanent in the acephalous fœtus. An aqueous fluid is the first product deposited by the vessels in the cavity of the skull and rachis. It therefore exists before the proper medullary matter, and distends the investing membranes. When a chick is examined on the sixth day of incubation, it presents, so far as its cerebral system is concerned, the same characters which mark the acephalous monster, for we find at the occiput a pouch filled with an aqueous fluid. If asked, then, what I consider such a creature to be? I reply, that it is a being which retains the first conditions of fœtal life, so far at least as one of its organic systems is concerned, and that the aqueous fluid, poured into the canal as the first rudiment of the cerebro-spinal system, remains unchanged, whilst the other parts go through their usual transformations; but this is not the effect of disease or disorganization, it results solely from the natural process of development being interrupted or suspended."

What are the causes, it may here be asked, which can thus retard the progress of growth in a particular organ or system? A consideration of the state of the arteries in the part will supply a satisfactory explanation.

"The extreme diminution of the size of the brain and the advanced state of ossification of the skull depend on one and the same cause, the

explanation of which was first given by M. Serres, in a paper on the sanguineous system of monstrosities, in which he shewed that the hypertrophy of one part and the atrophy of another in connexion with it, depend on one and the same cause, viz. the antagonism which subsists between their nutritious arteries."

Thus, in an adult, when the face and skull are in their usual proportions, the two carotid arteries are nearly equal in diameter; but in the infant when the skull predominates over the face, the internal carotid is the larger. In the podencephalous monster this proportion is reversed; the external is increased in size, the internal, diminished considerably, is but a rudiment of its usual capacity, and all its branches suffer the same change, whilst the external carotid and its branches are unusually dilated.

" If from the examination of the vessels we pass to that of the parts which they supply, we shall find a similar proportion to subsist between them. Whilst the external parts are considerably developed the brain being supplied by a diminished vessel is unable to go through the progressive series of its transformations. Now this inverse development of the carotids, which is here an anomaly, is a permanent state in some lower animals; for instance, in the crocodile, which, in respect to the brain and the extent of the bones of the skull which enclose it, resembles in every particular the podencephalous monster."—p. 24.

The law of harmony which subsists betwen the sanguineous and other organic systems, is of such general application that it enables us on rational principles to account for the occurrence of almost all those anomalous productions: for we find that the different conditions of their existence invariably depends on, and is influenced by that of their arterial system. Thus one class of these beings, whose development has been arrested, remains below its natural standard. In these, in consequence of the atrophy or absence of certain arteries, we find that the organs which they supply are either deficient or wanting. Those without brain want the internal carotid arteries, those altogether acephalous have no primitive carotids; those without anterior extremities like the biped reptiles are deprived of the axillary arteries; those that are bimanal want the femoral; and if any of the viscera are wanting so also are their appropriate arteries.

There is, on the contrary, another class, in which the arterial system, having acquired an increased development passes, its usual limits. In these the organs are double in consequence of the repetition of the vessels which produce them in the natural state. Thus the primitive carotid, if double at each side, will produce a double head; a double descending aorta will produce two trunks, whilst the head is single if the ascending vessel is

single, double axillary arteries will develope four upper extremities; double femoral arteries will be attended by four lower extremities; and finally, a double median sacral will produce two tails.

There is, however, a limit to these deviations from regular conformation. The connexion and harmony which subsist between parts act as a corrective; for we never find, in one of these beings, an additional tail springing from the head,—a head attached to the lower part of the body, or an upper extremity placed where the lower ought to be. The situation of these parts in monsters corresponds to that which they occupy in the regular forms; for which this reason may be assigned. The carotid, femoral, and sacral arteries may be double, and so produce a repetition of the organs which they supply; but no one ever saw the sacral arising from the carotid, or the axillary from the iliac; and, consequently, we never find an additional limb or tail arising from the face or head of an animal, though its form may deviate ever so much from the natural condition.

These statements rest on the authority of M. Serres: they are supported also by some dissections which our author has made, particularly of a podencephalus monster. An attempt was some time since made to throw discredit on the conclusions and facts of M. Serres. An acephalous case was presented to the academy, in which the internal carotid artery retained its natural proportion to the external. We should, however, recollect that a single contrary instance may restrict the general conclusion, but does not overthrow it. To M. Serres every credit is justly due, for his great research, talent, and assiduity; but whilst we admit that the atrophy or hypertrophy of particular parts must depend on that of the nutritious arteries which supply them, we are free to confess that the proposed solution removes the difficulty but one step further off. This must be quite evident in those cases in which an additional limb or part is produced. That a part should maintain its existence, it must be supplied with an artery; but then the question at once arises—what assignable cause could, in the first instance, have determined the production of that vessel?—We admit, then, as an anatomical fact, the co-existence of the new artery and new part; but it seems quite clear that the knowledge of that fact supplies us only with an additional link in the chain of causes, but by no means enables us to get at the end of it.

We have daily opportunities of seeing several deviations from regular conformation, which are less marked than those which have been hitherto noticed. We allude to those fissures or deficiencies which exist towards the central line of the body, such

as hare-lip, fissures in the head and soft palate, bifid spine, incompleteness of the anterior wall of the abdomen, &c. The explanation of these has hitherto been a desideratum. M. Serres is the first who supplied an adequate one.—(p. 23. Introduction.)

" Harvey, from examining the first rudiments of the heart in the chick, was led to conclude that the point which he saw pulsating was the root of the whole being, from which issued branches to the different organs. Hence it followed as a law, that the development goes on from the centre towards the circumference. This doctrine has been taught by every anatomist from the time of Harvey to the present day. It, however, happens to be precisely the reverse of the order pursued by nature; for the fundamental law which directs the process of development is—that every organ taken separately, and the whole body taken in its totality, are developed *from the circumference towards the centre.* Thus every organ is, in the first instance, double, its parts placed laterally with regard to each other, and, extending inwards, join at the central line to form organs, which have only been named single, because we have been in the habit of examining them after they are fully formed. In the osseous system this eccentric development is particularly striking. In the trunk the ribs are formed first, then the lateral processes of the vertebræ, and lastly their bodies. In the skull the lateral parts are first ossified; then the ossification proceeds towards the centre. This explains at once the double development of all those pieces of the skeleton which occupy the median line. Thus the rachis consists of two distinct columns; one on the right, another on the left. The sacrum is, in the first instance, double; so is the basilar process of the occipital, and the body of the sphenoid bone."

If any accidental cause should interrupt the progress of ossification towards the central line, the spinal column may remain open along its whole length, as in anencephalous cases, or in particular part of it, as in spina-bifida; and, lastly, even the bodies may remain ununited, as in the case above cited from Lallemand.

" Again, if we examine the fœtus at an early period, we always find the spinal chord composed of two layers, altogether separate from each other; one on the right, the other on the left. After some time, these unite anteriorly along the median line, and so form a groove open in its whole length, and finally the margins of the groove approach posteriorly, so as to form a complete canal."—p. 39.

This same law obtains also with regard to the muscular system. The lateral muscles on the head are the first that become apparent, such as the temporal and masseter, and then the others in order towards the middle line. So also with the chest and abdomen the same principle holds good. Thus it is that we first find the oblique muscles on the sides, and,

some time after, the pyramidals and recti which exist more anteriorly.

" The abdomen (says Serres) presents in the fœtus, at an early period, one great opening, the intestines being outside its cavity; in proportion as the muscles extend from the circumference towards the centre, they gradually enclose the viscera, and the deficiency along the median line is gradually filled up—hence, at birth, the only opening that remains is that of the umbilicus."

In the course of the work which we are now examining, allusion is frequently made to a paper on monstrosities by the late Professor Beclard. Any contribution to knowledge made by a man universally admitted to have been one of the ablest and most learned men of the day, should at all times receive the most serious attention. But we feel anxious, on other grounds, to allude to his opinions on the present occasion, as we wish to contrast them with those adopted by Lallemand, Serres, and G. St. Hilaire, on the production of monsters. The opinions of Beclard will, we conceive, be most readily understood, after we have given a short statement of a case which he had an opportunity of examining, and which seems to have biassed his mind somewhat in the view he has taken of the subject.

" In 1813, a woman at Angers was delivered of twins, in the sixth month of her pregnancy. Of these, one was without head or arms, presenting but the lower part of the body. The umbilicus and chord were well formed, the genital organs were male, the feet wanted several toes, and were turned inwards. The body formed one cavity, being without a diaphragm. Behind the sternum, there was an interlacement of vessels in a dense, reddish substance, from which branches passed off between the ribs. There were no thoracic viscera. The subcutaneous cellular texture of the abdomen contained several serous cysts; that of the limbs was infiltrated. The liver, spleen, and stomach were likewise wanting; but the pancreas, kidneys, ureters, and bladder, were in their natural situations. The intestine began with a closed extremity attached to the top of the trunk; it was convoluted and connected with the mesentery. The umbilical vein terminated in the cava, and the umbilical arteries came off from the hypogastric. There were ten ribs at each side. The rachis contained its medulla from which the nerves arose."

From this case, and the reports of other similar malformations, Beclard conceived himself justified in deducing the following conclusions:—" 1st, That acephalous monsters occur most frequently in twin births. 2d, That whenever the nervous centres, which give rise to the nerves of particular parts, are wanting, those parts are wanting also. In fact, that the absence of certain parts, external as well as internal, coincides with the disappearance, more or less extensively, of the nervous centres

from which they derive their vitality. He conceives that the production of an acephalous fœtus depends on the existence of a dropsy in the spinal column, which, if it occurs at an early period, prevents the developement of the parts which receive their nerves from it, or causes an atrophy or destruction of them, if their developement had already commenced; and this opinion he rests on the fact of his having observed, in such cases, traces or remains of the parts thus injured or curtailed in their growth."

These conclusions, it will at once be perceived, are liable to all the objections urged against the opinions of Lallemand. It seems rather unaccountable how such an inference should be drawn as that, "whenever the nervous centres, which give rise to the nerves of any particular part, are wanting, those parts are wanting also;" for even the acephalous case reported by Morgagni (and which Beclard certainly read, as he has quoted every case on record,) is stated to have been plump and well conditioned. We allude to these circumstances here, chiefly to shew how liable every man is to have his views and reasonings biassed by particular cases, and how prone we all are to generalize from single instances. When treating of the causes of monstrosity, M. G. St. Hilaire seems to have given way to the same propensity, and to have considered as the efficient cause of these anomalous productions what appears to be but an accidental circumstance attending them.

"In order to determine the causes which produce these disturbances in the conformation of particular cases," says our author (p. 509), "I endeavoured to produce similar derangements in the chick during incubation. In these trials I succeeded only to a certain extent, not being able to produce what could be properly termed a monster, as I could not retard the progress of developement in one set of organs, allowing the others to go through their natural transformations."

When eggs are placed in a moderate temperature with a view to produce the same effects, as by incubation they lose by evaporation some of their weight, the air penetrates their shells, and some imponderable fluids, such as heat and light, pervade them, so as to establish a sort of circulation. In order to arrest or derange these reciprocal actions and motions, a certain number of eggs were enveloped in gold-beater's leaf; some were varnished, and others were scratched or punctured in particular parts. These measures gave rise to several deviations; all, however, referable to three heads. In one set, some traces of organization commenced, but no chick was produced; in another, the embryo was arrested when it reached about a third of its growth; in a third it was enlarged considerably, particularly

towards the hind parts, so much so, that at the time for "breaking the shell the motions of the head became much impeded."

Whilst engaged in these experiments, a case occurred to M. G. St. Hilaire, which, as he conceives, throws much light on the causes of monstrosity. We have designedly reserved it for the close of our analysis of his work, as on it he rests the greater part of his reasonings on the cause of these productions.

"A woman, already the mother of some well-formed children, was delivered of a male child, which presented several deviations from natural conformation in all the cavities. During her pregnancy, she had some slight floodings, followed by a copious serous discharge; the delivery took place in the sixth month. The child lived for some moments. The bony arch of the skull was incomplete, the parietal, the vertical portion of the frontal, and the upper part of the occipital bone not being ossified. The upper part of the head, corresponding to the hemispheres of the brain, was altogether destitute of integuments, the dura mater forming the external covering. On the upper and lateral part of the head at the left side was a band of membrane about an inch and half in breadth which was attached to the centre of the placenta, near the insertion of the chord. The upper lip was divided by a double fissure, the anterior wall of the thorax and abdomen was deficient, so that the heart, deprived of pericardium was outside the chest, its apex being directed upwards and to the left side. The liver, stomach, and intestines also projected forwards, and could be distinctly seen through the serous membrane which invested them. The double hare-lip did not consist in a mere fissure of the skin, there was also a division of the palate. This deformity arose from the non-development of the organ of smell, and gave rise to a conformation analogous to that which is permanent in fishes. Besides the membranous band which connected the surface of the head to the placenta, there were several rudiments of similar productions remaining on other parts, particularly round the heart and its auricle (for the septum auriculorum was not complete) some also were attached to the liver and intestines, especially along their convolutions."—p. 209.

To these bands M. G. St. Hilaire ascribes a very important part in the production of monstrosities; in fact he considers them as the sole cause of these malformations, or to use his own words, (p. 503.)

"In my opinion every monster is produced in the first instance by one or more placentar bands, that is to say by membranes passing from the fœtus to the placenta. In the podencephalous case described (p. 228) two bands commenced the derangement, one extending on the head, the other along the loins, and sexual organs. The head was thus constantly subjected to disturbing causes which impeded its natural developement, but the band on the loins appears to have been detached at an early period, as only some slight traces of it remained."

Suppose we admit in its fullest extent the influence of these

bands, we are naturally prompted to ask, 1st, What are the causes which produce them, 2d, What is their mode of action in the production of the phenomena?

When any violent exertion, or mental impression produces such a disturbance in the uterine system as to cause a partial rupture of the membranes, and evacuation of the liquor amnii, the placenta and uterus are brought into immediate contact with the fœtus, and the consequent irritation, by determining the effusion of lymph, and production of false membranes, may give rise to adhesions between them, such as occurred in the case last described. The researches, of M. Serres, who paid particular attention to the early conditions of fœtal life whilst investigating the laws of osteogeny, have shewn that the osseous parts forming the walls of the chest gradually extend from the vertebral column, as their point of departure forwards to the central line of the sternum, which therefore is the point last ossified. As then there is a period in which the viscera, destitute of integument, form as it were the anterior surface of the embryo, we can have no difficulty in conceiving how adhesions may arise between these parts and the surface of the placenta or membrane of the chorion. And if the natural extension of the superficial parts from the circumference towards the median line be retarded, we see how the viscera may be found at birth outside the cavities destined to contain them. The fœtus under these circumstances seems to be subjected to the action of two opposing forces. 1st, the tendency of its own development to make progress from the circumference towards the central line of the body; 2d, the traction exerted by the membranous bands acting in the opposite direction, and so retarding this natural progress.

The effect of these preternatural connexions may be rendered still more manifest if we consider how likely they are to derange the circulation in the placenta. A comparative anatomist must always be disposed to attribute to this organ a much more important office than the human anatomist who is in the habit of examining its structure only in one species of animals.

"When we examine it in the different orders of mammiferous animals, we find that its conformation and structure differ as decidedly as the characters of the beings to which it belongs. Thus in carnivorous animals, the placenta is annular, being expanded like a girdle round the body; in the mole it covers the back like a cloak; in the gnawers it assumes the form of a rounded cake in front of the abdomen, whilst in the ruminant animals it is expanded, and presents a number of fleshy prominences or cotyledons."—p. 51.

We may here observe, that as little or no attention has hitherto been paid to the state of the placenta in cases of monstrous

births, it would be altogether premature to speculate farther upon the influence which any particular derangements of it may exert in producing these anomalies; we can easily conceive, however, that several circumstances, such as those already mentioned, may delay or derange the process of growth in the new being and so prevent it from going through its natural transformations. But when we recollect that there is another class of monsters, namely, those with an excess of parts, we cannot assent to the general conclusion sought to be established; for it seems altogether impossible to conceive how a set of adventitious membranes attached to the surface of the embryo can determine the production of additional limb, head, or tail.

The work, of which we have now concluded our notice, may be considered as a supplement to one published some time since on comparative osteology. In this, some new views were started and several original ideas advanced, calculated to supply the means of arriving at the determination of organs with more ease and certainty than had hitherto been done. As these views were not as generally adopted as the author could wish, he has given a summary of them in the present work. Want of space compels us for the present to omit further notice of them, we do so, with the less reluctance as we shall on another occasion have an opportunity of recurring to them when we review the Prize Essay of M. Serres on Osteogeny.

ART. V. *A Manual of Clinical Medicine, containing the Symptoms and distinguishing characters of Diseases, appearances on Dissection. &c. Translated from the French of* M. MARTINET, by JONES QUAIN, A.B. M.R.C.S.

The work of M. Martinet, to which we direct the attention of our readers, has been for some time very generally read, and approved of in several of the Continental schools; it is, in fact, in the hands of almost every person who follows the clinical practice of the Paris hospitals. The circulation of the book has been so very extensive, that a second edition was called for at the commencement of the present year; and on comparing it with the first, we find some additions, particularly a chapter on Diagnosis, and several alterations, which, in some respects, are for the better. In a short preface the author states the plan and object of his work; and to save the trouble of re-

peated references to authorities and books, enumerates all those from which he has made extracts, or derived information. The list is a very full one, as it includes the name of almost every pathologist of the present day. Laennec, Lallemand, Louis, Serres, Andral, Broussais, Bertin, Chomel, Cayol, &c. &c.

"The first part of this work, which is intended as a clinical guide, contains a brief statement of the necessary requisites for the proper conduct of clinical pursuits; and a detailed account of the improvements which, of late years, have been introduced in the methods of investigating the diseases of the three great cavities of the human body."

"In the second part, care has been taken to give, in a condensed yet complete form, every thing that is necessary to enable the observer to distinguish diseases from each other, and, if necessary, to draw up with precision the history of them; to this is subjoined an enumeration of the symptoms of different affections, and the morbid alterations which they induce. The office which the author has for some years filled at the Hotel Dieu, has afforded him abundant opportunities of verifying, by actual observation, the truth of his statements."

The introduction contains a series of very judicious remarks, on the importance of clinical studies—the method of pursuing it, the necessity of a good preparatory education, the subjects to which the student should direct his attention, the method of drawing up cases, of examining patients, and conducting *post mortem* examinations.

"One of the most efficient means of acquiring these different attainments, and becoming skilful practitioners is, when we see a particular case to consult the writings of those who have treated expressly upon the disease to which it is referred. The work will then be studied with advantage when we have an example before us, with which we can compare its descriptions, &c. In this way, precept and practice are made to go hand in hand, tact and discrimination are acquired, and the experience of those who have already distinguished themselves is made to supply our deficiencies in this particular. We should not, however, follow this course as servile imitators. We must exert our own discretion, for though we find much to approve, we shall meet with something to condemn; while we adopt the one, we appropriate to ourselves part at least of the spirit of our masters; when we reject the other, we feel reason to distrust ourselves, seeing the errors into which our predecessors have fallen. When the mind is disciplined in this way, the scope of its inquiries will be greatly expanded, and a new importance be given to circumstances previously regarded as insignificant. It is on this principle that such great advantage is derived from reading the works of the ancient physicians, who paid so much the more at-

tention to the signs and symptoms of diseases, as they had not the lights of pathological anatomy to guide them."

Martinet remarks that nothing more fully proves the want of sufficient precision in the conduct of observations than the disputes about facts which we so constantly witness. But whence it may be asked arises this difference in the reports of the same facts? It arises from the different degrees of knowledge possessed by the persons who have observed them, from some error in their methods of observation, from ignorance of the exact meaning of the terms they employ, or from want of attention in the examination of their patients—Hence the necessity not only of strictness in conducting our observations, but also of precision in reporting them :—we concur very fully in the following remarks on this subject.

" The statement of a case should not be loaded with superfluous detail; it should contain what is necessary, or rather what is indispensible; but when the subject is obscure, the details should be extended and minute. In the descriptive part no reflections or opinions should be introduced, as that cannot fail to interrupt the narrative. The leading symptoms, particularly those which serve to establish the diagnosis, should first be noted down, ranged according to their importance, reference being always made, as far as can be done, to the order of their appearance. These should be expressed clearly, so as to impress them on the mind of the reader. If several organs be affected at the same time, the symptoms referable to each should be collected into separate groups; those which are common to all, or are of secondary importance, should follow; and then if the treatment be given, it will be necessary to mark the state of the patient before and after the exhibition of medicine. Superfluous details should, of course, be omitted; and nothing stated but what is indispensibly necessary."

Our methods of examination, it is very justly observed, should partake of all that precision which marks the improved pathology of the present day; and though they may not in every case be directed to each viscus and tissue, they should invariably be directed to explore the three great cavities, where the vicinity of the contained organs, and their numerous sympathetic relations, constitute so many fertile sources of error.

" The acute and chronic forms of disease require a plan of examination and narration altogether different. Every thing connected with the previous history should be known, and stated fully in chronic cases; it is the only means of throwing any light on the obscurity which so generally surrounds them. But in acute cases, this is far less necessary; it is of very little use, when considering a case of arachnitis, or pericarditis, or, when giving its history, to go back to any previous affections of the patient, or inquire what has been his usual manner of living, or what influence any particular agent may have exerted upon

him. When the symptoms are urgent, our object is to ascertain speedily the nature and extent of the disease, and meet it by an energetic plan of treatment. Though this principle is true as to treatment, it is not strictly so with regard to the prognosis, which must be modified by the existence of any particular organic disease, or hereditary predisposition, known to exist in the individual himself, or in his family."

The method of examining patients is that adopted by Professor Recamier, in the Hotel Dieu, and appears well calculated to attain the necessary information concerning the patient's situation, as well as the nature of his disease. When the observer has got sufficient reason to suspect an affection of the brain or its investments, of the chest or its vicera, it remains for him to verify his opinions by carefully examining all the functions liable to be deranged by affections of these important organs. We cannot follow the author through all his details; we shall, however, insert the brief summary with which he concludes the chapter.

" In recurring to what has been here stated, we see that the observer should attend to the age of the patient, which, in some cases, will assist in distinguishing apoplexy from inflammation of the brain, as the former seldom occurs before the age of forty, while the latter may arise at any period of life. He should examine the skull and vertebral column, to ascertain whether there is any external injury or malformation; he should attend to the mode in which the disease has set in, its progress and symptoms; then he should examine the present condition of the patient, commencing with the intellectual functions, having, in the first instance, ascertained their state in health. Delirium and its character should next engage his attention, and also the state of stupor, which may vary from mere somnolence to complete coma, from a slight slowness in answering questions to total loss of understanding. The manner of articulation should also be attended to. After inquiring whether there is any pain or particular sensation in the head or vertebral column, the examination concludes with a review of the organs of sense, as the sight, hearing, and taste.

" The observer, then, passes in review the state nf the pupils, of the globe of the eye, eye-lids, lips, tongue, upper and lower limbs; he then examines the muscular system, to ascertain whether there is contraction, convulsion, or paralysis in any particular part; or whether these phenomena are continued or intermittent. In drawing up the report of the case, he will follow precisely the same arrangement."

" After having thus investigated the condition of the three great functions which are influenced by affections of the brain, the observer should ascertain the state of the tongue, stomach, and bowels; he will state the existence of constipation or vomiting, and mark their symptoms with so much the greater accuracy, as affections of these organs very frequently simulate those of the brain. He may conclude with

a rapid glance at the state of the respiration, the pulse, action of the heart, state of the bladder, expression of countenance, and position in which the patient lies.

"When the medulla spinalis or cerebellum appears to be affected after some external injury, attention should be paid to the digestive, respiratory, and circulating systems. But that the report of the case may not be incomplete, he should examine the whole of the viscera, and state whether they present any thing remarkable. This is the only way by which complete and accurate cases can be drawn up, capable of still farther elucidating the pathology of the brain, which has latterly made so much progress."

In our last Number we entered pretty fully on the leading topics connected with the diagnosis of affections of the chest, we shall not, therefore, recur to them on the present occasion. Martinet has adopted the line of examination pursued by Laennec, he therefore treats of the phenomena which result, 1st, from the art of respiration; 2d those which depend on the voice; 3d the product of expectoration; 4th the symptoms given by percussion; 5th those referable to the heart and its connexions.

After treating each of these subjects at considerable length, he condenses the whole into a short resumé.

"We may here briefly sum up the different points to which the observer should direct his attention. He should begin with examining the expectoration, as being of considerable value in distinguishing diseases of the chest. If limpid and viscid, it indicates acute catarrh; if after presenting this appearance, it becomes opake, yellow, greenish, or puriform, it marks chronic catarrh; if it adheres firmly to the vessel in which it is received, and is more or less tinged with blood, it announces pneumonia; if round and opake masses float in a quantity of frothy fluid, or if they are puriform, streaked with white lines, and contain small white masses, insoluble in water, we conclude that they are produced in a tubercular excavation. If the expectoration is fluid, purulent, and suddenly coughed up in great quantity, it should make us presume that a fluid contained in the pleura, has made its way through the bronchi, and so is evacuated. When pieces of false membrane are expectorated, they are recognised at once as the product of croup; and a dark green fluid exhaling a peculiar fœtid smell marks gangrene of the lung. In hæmoptysis, bright red and frothy blood, is expectorated; this should not be confounded with that which occurs in hæmatemesis, or with bleeding which occasionally comes from the gums or the nares.

"The effects of percussion should next be attended to, as they tend to direct the observer in the examinations he is about to make with the assistance of the stethoscope. It should not be forgotten that even in health there are some parts of the chest which give a dull sound; for instance the region of the heart, and the lower part of the right side;

there are others in which the sound is heightened, as the lower part of the left side. Percussion indicates the parts in which the sound has become more dull, and those in which it is more clear than natural; diminution and absence of the natural sound, characterise pneumonia, accidental tissues developed in the lung or cavity of the pleura, hypertrophy of the heart and effusions into the pleura or pericardium: encreased loudness of sound occurs in emphysema of the lung, and when gazeous fluids are effused into the pleura; finally, the gurgling and metallic tingling indicate pulmonary excavations, or circumscribed cavities in the pleura communicating with the bronchi.

Enquiry should next be directed to ascertain the state of the respiration, (whether it be painful and provokes cough) the character of the cough and also of the voice, which may be hoarse, croupal, &c. after which, by the stethoscope, the observer may ascertain the parts of the lung which are or are not permeable to the air. The "rale crepitant," will indicate to him the first degree of pneumonia, œdema of the lung, and pulmonary apoplexy; acute catarrh will be distinguished by the "rale sonore or sibilant;" chronic catarrh, and the gurgling of softened tubercle by the "râle muqueux," and interlobular emphysema by the peculiar sound described above, as the *murmur frictionis*. (119.)

"The phenomena of the voice should be explored in the different parts of the chest. If pectoriloquy is heard under the clavicle, or in the hollow of the axilla, particularly at one side, it indicates phthisis; ægophony is the proper sign of effusion into the cavity of the pleura; finally, the metallic tingling announces a cavity communicating with the bronchi, and the metallic respiration a simple bronchial fistula.

"When any symptoms of effusion exist, it will be necessary to measure each side of the chest, and try by succussion to discover the fluid supposed to be present."—p. 126.

In the second part of the work, the diseases of the different viscera are treated separately; their distinguishing symptoms fully enumerated, the affections with which they may be confounded, indicated, and the anatomical characters which they present after death stated in such a way as to shew the progress of the derangement from its commencement to its termination. To give some idea of the manner in which M. Martinet has executed this part of his undertaking, we shall make a few extracts from his chapters on encephalitis and apoplexy, not that we conceive them to be the best executed, but because they clearly shew the difference that exists between the organic lesions produced by simple congestion of the brain, and inflammation of its substance.

"Inflammation of the brain may occur at any period of life from infancy to old age. There are usually some premonitory symptoms, such as a sense of weight in the head, of tinglings in the ears, deception of vision, irritability of the retina, numbness of one side of the body, pain or pricking of the limbs; when suddenly there supervenes a state of

contraction or convulsion, continued or intermittent, of the muscles of one side of the body, or only of one of its regions. If the intellectual faculties be not altogether destroyed, the patient complains of headache, usually referred to the side opposite to that which is the seat of the contractions; there is no delirium, the understanding is not deranged, it is merely weakened. Sometimes the contracted limbs are painful, particularly when they are flexed, and an effort is made to extend them; the pupil of the affected side is in some instances contracted, and the eye closed by the contraction of the orbicularis muscle; the commissure of the lips is drawn outwards, even when the mouth is not moved; but when any voluntary motions are made, the commissure of the opposite side experiences a deviation; the muscles of the neck are in a state of rigidity, and draw the head towards the affected side. Still these various effects of irritation diminish gradually in intensity, and are succeeded by symptoms of collapse; the muscles fall into a state of paralysis with flaccidity; the eye remains closed but it is by relaxation; the commissure of the lips, hitherto contracted, becomes pendant; the head and mouth are drawn in the direction *opposite* to that to which they had previously inclined,that is to say, to the sound side; the pupil is dilated, the sensibility at the affected side totally lost, and the understanding completely destroyed. We may here remark that in order to trace these different effects of the disease, we must observe the patient from the first invasion of the attack to its final termination.

Encephalitis presents several groups of symptoms, each indicating a lesion of a particular part of the brain. Affections of the upper extremity seem referable to lesions of the posterior fibres of the optic thalamus of the opposite side; those of the lower extremity to alterations of the anterior half of the corpus striatum."

This last statement seems to be made with too much decision; the possibility of tracing lesions of the upper extremity to derangements of the optic thalamus, and of the lower, to those of the corpus striatum of the opposite side, was first asserted by two students attached to the hospital La Salpetriere. Several persons have been disposed to give it credence, chiefly, we believe, because it has had in some degree the sanction of Ollivier's authority; but though he mentions the opinion in his work, on the spinal marrow, he by no means vouches for its accuracy. Martinet seems to have taken it in the same way, without examination, and if it be any longer allowed to be repeated, it may soon pass currently as an established point of doctrine. We have referred to all the cases reported by Lallemand and Abercrombie, and can find no grounds sufficient to induce us, to assent to the opinion here alluded to—when we recollect the manner in which the fibres of the brain pass on to their final termination in the convolutions, and that those which are found in the corpus striatum, are but the continuation of these which pass through the optic thalamus, we shall see some reason to suppose

that if the latter become disorganized, the process of innervation must be interrupted between the corpus striatum and the lower extremity, supposing these parts to be so intimately connected, as that a lesion of the one implies derangement of the other. If any such connexion really exists, it has escaped the notice of those eminent pathologists just alluded to; and instead of stating it as an established point, it should be merely referred to as an inference deduced from a few cases and experiments, which require farther examination before they can be admitted as conclusive. The anatomical character which indicate inflammation of the brain vary according to its duration. Its progress may be divided into three stages, each marked, as we have seen, by a particular group of symptoms during life, and presenting certain peculiar characters after death.

"The inflamed part of the brain presents different appearances, according to the time that the disease has lasted. When it is only of some days duration, the white substance, and still more perceptibly the grey, exhibits a rosy or slightly red colour, and in it we perceive several vascular filaments. The firmness of the affected part is considerably diminished, and, when cut into, the surface of the incision presents (not a multitude of minute drops of blood reappearing after being wiped away, as occurs in congestion but) a multitude of small red points which cannot be removed by ablution. We frequently have occasion to observe these appearances in the cortical substance of the convolutions after arachnitis or violent congestions of the pia-mater. In a ble. Finally, in some cases the blood becomes so intimately combined more advanced stage of encephalitis the brain is red, the vascular injection more strongly marked, and the "ramollissement" very considera- with the cerebral substance, that its colour approaches that of the lees of wine, being of a deep dusky red; there is no actual effusion of blood, except we consider as such some small dots about the size of a pin's head, which we occasionally find in some particular points; in such cases the brain is in a state of extreme "ramollissement," or "softening."

The third stage of encephalitis is that of suppuration; the red colour gradually disappears, the blood is replaced by a seropurulent fluid, which is infiltered into the substance of the brain, combines with it, and gives to it, according to the extent of the admixture, a greyish, dull white, or yellowish-green colour. The pus accumulates in some spots to a greater or less extent; sometimes there are no more than one or two drops, but still they are easily recognized by their resemblance to the pus of ordinary phlegmon; in other cases, however, it occupies the entire of the centre of one hemisphere, where extravasated as it were, it forms cavities for itself, in which we find mixed with it several fragments of cerebral substance;

lastly, in some cases we find several small cavities, uniting together to form a large one.

The grey substance is generally the seat of encephalitis; the parts most usually affected are the corpora striata, optic thalami, convolutions, pons varolii, and cerebellum, its relative frequency in these situations, being indicated by the order in which they are here stated. It is in these parts also that effusions of blood most usually occur in cases of apoplexy—which depends on their greater vascularity—but though these affections agree in this particular they differ in almost every other as is very clearly stated in the work before us—

"The predisposing circumstances to apoplexy are, hereditary disposition, previous attacks, hypertrophy of the left ventricle of the heart, and the period of life from the 50th to the 70th year. In general, without any headache or other precursor, a paralysis more or less complete, both of sensation and motion, occurs either in the whole of one side of the body, or only in one of its regions, accompanied by an immediate relaxation of the muscles of the parts affected. In cases of effusion into the brain, the paralysis is always protracted, the time of its duration being proportioned to the extent of the effusion; perception, though weakened, is preserved unless the coma be very profound; the respiration is more or less stertorous. At the commencement the pulse is hard and full, but we observe no fever or headache, during the course of the disease, no vomiting occurring at its invasion, on the contrary, it is difficult to excite it; there is, in general, constipation or retention of urine. When the paralysis attacks the muscles of the face, as is generally the case, the point of the tongue, when protruded, inclines to the paralytic side, the commissure of the lips at the sound side is drawn upwards and outwards, when the patient moves it, whilst on the other it is depressed and pendant, or merely immovable; the muscles of the cheek on the paralyzed side, and those of the eyelid are sometimes, though not very commonly, in a state of relaxation more or less complete; the pupil is insensible, sometimes dilated; lastly, the head is drawn to the sound side by the muscles which remain unaffected, in consequence of the paralysis of their antagonists."

Apoplexy may be confounded with encephalitis, ramolissement, or softening of the brain, effusion of blood on its surface, and with some forms of neuralgia. After fully enumerating the symptoms which occur during life, M. Martinet proceeds to describe the appearances presented after death, in order to establish the diagnosis between this affection and the others above-mentioned.

"In cases of apoplexy, we find effusion of blood to a greater or less extent in the hemisphere of the brain, opposite to the side in which the paralysis had occurred. The fluid is found either in several small cavities, or accumulated into one mass. At other times it is intimately blended

with the cerebral substance, forming with it a red or brown pulpy mass. When the effusion is recent, being only of some days' duration, the blood is black, partly coagulated, and adherent to the substance of the brain, but may be completely removed by affusion with water, which carries off with it some portions of the latter. The portion of the brain which immediately invests the effused mass is torn, irregular, and presents various excavations; its consistence is much diminished; its colour is a very deep red at the centre of the effusion, which lessens gradually towards the circumference; this alteration in the consistence of the brain extends no farther than two or three lines into its substance. We occasionally find some shreds of cerebral matter more or less softened, and so intimately blended with the effused fluid as to present the appearance of coagula of blood.

"At a more advanced period, the part of the brain surrounding the clot, which had in the first instance been softened, becomes firm and of a reddish colour; then passes to a dusky yellow; a serous exhalation is poured round the clot, which also undergoes a series of alterations; it becomes diminished in size, and increased in density; at the same time its colour changes, after having been black, then red, yellow, and finally grey, it at last becomes absorbed altogether, when the walls of the cavity approach each other, contract adhesions, and after some time present a real cicatrix of a linear form and yellow colour, which is produced by means of cellular and vascular bands. We sometimes find, either in the hemisphere in which the recent effusion has occurred, or, in the other, several cavities resulting from old apoplectic attacks. The portions of the brain most usually the seat of these effusions, are the corpora striata, optic thalami, and the parts immediately surrounding them." —p. 258.

The translator has here added some notes for the purpose of completing the diagnosis of these serious and complex affections. He remarks that the symptoms of inflammation of the brain may be arranged under two heads; those of irritation, and those of collapse; the former being marked by head-ache, sensibility of the retina, contraction of the pupil, pain of the limbs, and continued or intermittent contraction of the muscles; the latter by diminished intelligence, stupor, somnolence, loss of the power of utterance, with paralysis of the muscles and insensibility of the skin. The first series occurs in arachnitis, and the second in apoplexy; but it is only in inflammation of the brain that both are united; for in it we find irritation followed by disorganization. Hence we may briefly sum up the distinguishing symptoms of these three affections:—In inflammation of the arachnoid, we find spasmodic symptoms without paralysis; in hæmorrhage, sudden paralysis without spasmodic symptoms; in inflammation of the brain, spasmodic symptoms, and gradual paralysis, the progress of which is, however, unequal and intermittent.

Before we conclude our notice of this little work, we shall

make another extract from the chapter on the Diseases of the Chest. The following summary of the symptoms and pathology of pneumonia, may be considered as a fair specimen of the manner in which this part of the book is executed :—

"Laennec has established three periods or stages of this disease, each characterised by a distinct group of symptoms. In the first, the respiration is difficult, accelerated, laborious, becomes also unequal and imperfect, and so bears no proportion to the dilatation of the walls of the thorax. When both sides are affected it becomes abdominal, the ribs over the affected part are unmoved; occasionally there is a dull pain in some part of the chest, but this is by no means a constant occurrence, except when the disease is complicated with pleuritis. On percussion the chest sometimes sounds as in health, but most commonly its resonance is rendered dull, or lost altogether in a greater or less extent, always however limited to that of the affected part of the lung.

"When we examine the respiration in those parts in which the resonance is altered, we find it feeble, scarcely perceptible, or altogether masked by a "*râle crepitant,*" which indicates both the nature and extent of the alteration. The respiration becomes "puerile" in the parts that remain unaffected, and sometimes also in the other lung. These phenomena soon change, either by the resolution of the disease, or by its making further progress. In the former case, the "râle crepitant" diminishes in extent and intensity; the murmur of respiration approaches its natural state; the sound of the chest becomes less dull, and its movements more regular; and finally, a "râle muqueux" is audible, which indicates the change of the expectoration, and approach of convalescence. But if, on the contrary, the disease proceeds unabated, the alterations in the movements of the thorax still continue, the sound becomes altogether dull, the "râle crepitant" ceases, for the lung is no longer permeable to the air. The murmur of respiration is inaudible, except in some points corresponding to the large bronchiæ, in which the respiration becomes sonorous, and the voice resounds so as to produce, in many instances, a real bronchophony. The expectoration is more or less difficult, the sputa are white, semi-transparent, or slightly yellow, and so viscid as to adhere to the vessel even when inverted; in other cases they are slightly streaked with pure blood, or so intensely blended with it, as to exhibit a dusky or perfectly red colour."

A difference of opinion has for a long time existed amongst pathologists concerning the true seat of pneumonia—some contending that the cellular texture between the air-vesicles is the part affected; others, that it commences in the air-vesicles themselves. The disease seems to consist essentially in an inflammation of the air-cells, the inner surface of which secretes a fluid at first muco-sanguinolent, and afterwards purulent. As the inflammation advances, the fluid becomes more thick and viscid, and can no longer be expelled from the vesicles in which

it is formed; it, therefore, accumulates in their cavities, obstructing and distending them, and gives rise to those granulations which give to the lung the hepatized appearance that marks the second stage of pneumonia. At a later period, it is not mucus that is poured out; it is pus, which, in its turn, fills the air-cells, and so constitutes the grey granulations which characterize the last stage, or "*hapatization grise.*" If a portion of lung in this state be pressed, we see the pus escaping in the form of drops, each seeming to come from the vesicle in which it was contained. The walls of the vesicles beome soft and friable, as all textures do when inflamed—hence the remarkable softening of the lung in pneumonia. A consideration of the symptoms of this disease, as furnished by auscultation, shews more clearly, than any general statements can do, the immense utility of the stethoscope—for by it we can ascertain not merely the existence of inflammation before any other means of examination could have even induced us to suspect its presence, but also can accurately determine the precise part of the lung in which it is seated, as well as the extent which it occupies. In the early stage of the affection we hear at some point of the thorax "the râle crepitant;"—if it makes progress, the corresponding part of the lung becomes gorged with blood, and therefore impermeable to the air—the surrounding parts, however, seem to take on an increased action, and in them the respiratory murmur becomes, as it were, exalted, assuming the character of what Laennec terms the "puerile respiration."

These two circumstances, then, enable us at once to determine the extent of the inflammation, and if we watch its progress, we can ascertain whether it is increasing or diminishing. Relapses not unfrequently occur in pneumonia, which are usually attributed to some error in diet, or want of proper caution during the period of convalescence; but in the greater number of such cases, the inflammation, though suppressed, is not altogether removed, and consequently is liable to recur by any slight exciting cause. The use of the stethoscope will materially diminish the risk of such casualties, by enabling the physician to detect any inflammation, however slight it may be, which still lurks in the part. The importance of this information, in a practical point of view, need not be further insisted on.

It has been lately asserted, even by some Journalists, that the immediate ausculation by the naked ear is preferable to that practised with the assistance of the cylinder. A student who has applied to the study of diagnosis for a month or two, may, we admit, make such an observation; but every one who has paid sufficient attention to the subject, must at once be convinced

of its total inaccuracy. There are some situations in which the naked ear cannot be applied; for instance, immediately above and below the clavicle, and in the hollow of the axilla—to which, as being the points corresponding to the upper lobe of the lung, our chief attention must be directed in all phthisical cases. Besides this, when the side of the head is applied to the chest, the friction caused by such an extent of surface will necessarily confuse those minute sounds given by the respiration; lastly, in females the situation of the mammæ will always prevent the adoption of this mode of examination, which, from other considerations, must be repugnant to the feelings of the patient as well as the physician.

We have heard some remarks on the construction of the cylinder, the justice of which we can by no means admit. Some persons seem disposed to make light of Laennec's pretensions, in as much as the form and composition of his instrument seem to prove him altogether ignorant of the first principles of acoustics; and this objection is said to be supported by the authority of a very distinguished mathematical scholar. To this gentleman, as well as to those who think with him, we would recommend the perusal of the first chapter of the "Auscultation Mediate," which, it is quite evident, they have not as yet taken the trouble to read. As the discovery of this method of examination may fairly be said to constitute an important æra in the history of medicine, we shall briefly state the circumstances under which it was made, and the alterations which were, from time to time, adopted in the construction of the instrument. We shall transcribe the passage from the last Edition of Laennec's work.

"I was consulted, in 1816, by a young lady, who exhibited some general symptoms indicative of disease of the heart; but this I could not take on myself to determine, as from her being very fat, no satisfactory results could be derived from percussion or the application of the hand. As the age and sex of the patient forbade the direct application of the ear, I happened to recollect at the moment the well-known acoustic phenomenon, that when the ear is applied to an end of a beam, we can distinctly hear a pin falling on the other. In order to make application of this principle, I took up a quire of paper which lay on the table, folded it into a roll, placed one end of it on the chest, and my ear on the other, and at once found that I could hear the pulsation of the heart much more distinctly than I had ever done before. From this I conjectured that the principle may be taken advantage of, not only in studying the actions of the heart, but also those other phenomena which determine any particular sounds in the cavity of the chest, such as the respiration, voice, or the presence of a fluid effused into the pleura. With these views I instantly commenced at the hos-

pital "Necker," a series of observations, by which I have discovered the means of distinguishing the various diseases of the pleura, lungs, and heart, with as much certainty as a surgeon can determine the existence of a stone in the bladder by the introduction of a catheter. During the progress of these researches, I repeatedly altered the form of the instrument, as well as the materials of which it was composed. The cylinder used in my first trials consisted of a long roll of paper, closely bound together and glued, afterwards I tried substances of various degrees of density, but was surprised to find that the densest bodies are not the best fitted for the purpose; glass and metals having been invariably found not to transmit the sounds produced by respiration or the action of the heart, so distinctly by any means as bodies of less density. However contradictory it may seem to physical laws, I have, in repeated trials, ascertained that the best conducting media were composed of light wood, cane, or paper, in fact, of substances of a medium density."—p. 8.

It is not through any wish to engage in controversy that we seek to awaken attention to these matters. We have seen some of these instruments made of ebony and box-wood, and have heard of others of ivory. Doubtless it is to acoustic principles that we are indebted for these innovations; for they certainly should not be called improvements. The testimony of Laennec (and of all those who have had the good fortune of studying under him), as to the density of the substances best fitted for the construction of stethoscopes, is fully borne out by the experience of those engaged in the construction of musical instruments. Some years ago flutes were made of glass and ivory, possibly on the authority of some philosopher, who wished to see a rigorous application made of acoustic principles; they were, however, soon found to be the worst materials that could be selected for the purpose, and are now seldom seen or heard of. Such, we conjecture, will by and bye be the fate of our philosophic stethoscopes.

This digression has led us away, in some measure, from the work before us. There are some parts of it which we should wish to notice, particularly the section which treats of accidental tissues, and that on diseases of the abdomen, but we have already exceeded our limits. The Continental Journalists have invariably spoken favourably of the original, and we have no hesitation in saying that we consider this new edition an excellent epitome of pathology, and, as such, calculated to be very useful to students and practitioners.

ART. VI.—*Transactions of the Medico-Chirurgical Society of Edinburgh.* Vol. II. with plates, pp. 411. 8vo. Edin. 1826.

This volume is no less creditable to the Edinburgh school, than the one which preceded it, of which we took notice in a former Number. Among the list of contributors, are several names which stand high in the profession, and the papers by those who are less known, are valuable and well selected. As the work was late in coming to hand, we have not time to enter minutely into every individual paper, but we shall endeavour to analyze a few of those which appear to be the most interesting, and leave the consideration of the others for another opportunity. One remark strikes us, as characteristic of the whole volume, namely, that there is a good mixture of cases and dissertations, instead of the monotonous uniformity of cases only, which makes up the staple of some other medical publications of the day. We do not by any means undervalue cases, but we like to meet occasionally with something besides clinical reports, which frequently suggest but little in the way of remark, and which are very apt (we speak for ourselves only) to slip from the memory as soon as read, and leave not a trace behind.

Mr. WARDROP *on Exanthematous Ophthalmia.*—This paper is excellent as a nosological, diagnostic, and therapeutic account of a species of ophthalmia, almost always confounded with a strumous affection. As the disorder is of very common occurrence, we shall give as copious extracts from the article as may be of practical use to our readers.

Diagnostic Symptoms.—"The species of ophthalmia, to which the term exanthematous is here meant strictly to apply, is so denominated, from being always either accompanied or preceded by some eruptive disease. Eruptions of the scalp, and discharges behind the ears, so frequent in children, are the affections with which this ophthalmia is most commonly connected. These diseases alternate with the disease of the eyes, the latter becoming affected, when the eruption or discharge disappears; whilst, when either of these returns, the eyes recover. This ophthalmia also sometimes succeeds measles, scarlet fever, and other exanthematous diseases, but usually appears a considerable time after these affections have subsided, and when some eruption about the head seems more immediately connected with its appearance.

The symptoms of the exanthematous ophthalmia are very characteristic; for, besides being connected with eruptions, and confined to young people, the excessive intolerance of light, the enormous secretion of tears, and the relief from forcibly squeezing the eyes, are symptoms quite peculiar. The patient afflicted with this disease, can scarcely

hold up his head, and if he is desired to open his eyes, he is affected exactly as if he were looking on a mirror reflecting a bright sunshine, every attempt causing a profuse gush of tears, and being instantly succeeded by a violent and involuntary squeezing of the eyelids, and knitting of the eye-brows. He excludes all light, not only by holding down his head and squeezing the eyelids together, but by pressing a handkerchief firmly on them, or by resting his face against a chair in some dark corner of the room. When in bed he lies with his face buried in the pillow, a circumstance, which of itself points out the peculiarity of this inflammation and distinguishes it from all others.

" The intolerance of light is always most severe in the morning; but in the afternoon it sometimes remits so much, as to allow the patient to open his eyes, and see to a very considerable degree, for some hours. The tears, besides being of an extraordinary quantity, are of an acrid, irritating quality; producing violent paroxysms of sneezing, scalding the cheeks, the alæ of the nose, and the lips; so that these become inflamed and swelled, and sometimes covered with pustules and cutaneous ulcerations. The eyelids are also swelled, and have turgid veins on their surface. On trying to force them open, a torrent of tears gushes out, and it is not without occasioning great pain, that a small portion of the globe can be exposed. An attempt to get a view of the cornea gives great pain, and it is almost impossible to succeed. The palpebræ, as well as the sclerotic conjunctiva, are but slightly reddened; the vessels appearing as a few distinct trunks, instead of the diffused redness observed in many other inflammations. In general, both eyes are attacked with this disease, though one more violently than the other.

" Along with these local symptoms, there is always more or less constitutional excitement. The pulse is frequent and agitated, the tongue is particularly white, the primæ viæ greatly disordered, the abdomen tumid, the skin sallow, and there is great loss of flesh.

Treatment.—" The peculiarity of this ophthalmia is also marked by the effects of remedies in the treatment of the disease. General or local depletion, the application of stimulating ointments, of opiates, astringent collyria, &c., which relieve some of the other inflammations of the eye, have little or no influence in subduing the exanthematous ophthalmia. Hence the numerous cases where this disease, notwithstanding the use of a variety of local remedies, has continued for many years. It is, however, a disease as much under the controul of medical treatment as most others. The general plan of management rests but little on local applications. The chief attention, more particularly in the beginning of the treatment, is to be directed to the constitutional symptoms, and no local application, except cleansing the eyes with warm water, ought to be employed.

" The general treatment which is commonly necessary for the cure of the exanthematous ophthalmia, consists of first completely evacuating the bowels, and afterwards regulating them; of giving alterative and tonic remedies; and of producing an artificial discharge. Even when

this ophthalmia appears in a feeble and emaciated child, it will usually be found, that, by the exhibition of purgatives, feculent matter, both unnatural in quantity, and of a bad quality, will be evacuated; and, until its evacuation has been effected, other remedies avail little. One grain of calomel with three of rhubarb, given at bed-time, and repeated every other night, four or five times, whilst jalap or senna is taken the alternate mornings, will generally answer the purpose of bringing away the feculent contents of the primæ viæ. But whenever the quality of the evacuations improves, these medicines must be given with caution; and one dose of the rhubarb with calomel, given only once in six or eight days, and the senna or jalap occasionally, will be sufficient. For though the greatest benefit will be obtained by evacuating the bowels, violent purging will be found equally prejudicial. When the treatment has been so far advanced, that only one dose of calomel appears necessary in six or eight days, then at this time tonic and stomachic medicines may be advantageously administered. Of these I have found none so generally useful as the carbonates of soda or potass, either given singly, or combined with rhubarb and the bitter infusions. In some instances the mineral acids have been very useful, and also the preparations of iron. Whilst using either of these remedies, much attention is also due to food and habits of life. All wines and malt liquors are particularly hurtful, and the patient should live chiefly on farinaceous vegetables, with but a very small proportion of animal food. The body should not be loaded with clothes, and the head particularly should be slightly covered; protecting the eyes with only a single and narrow fold of black silk, hanging loosely over them, and not wearing a large bonnet. The hair ought to be cut very short, and the greatest advantage will be found from sponging the head and neck with water every morning; using it at first of an agreeable temperature, and making it colder by degrees, particular care being taken to dry the head well afterwards."

Mr. Watson *on Chronic Iritis.*—The acute inflammation of the iris is now perhaps as well known to the profession as ophthalmia itself; but chronic iritis is obviously so different in character, as to merit attention. Mr. Watson has, in this paper, given some useful and accurate observations, as will be seen from the extract we shall now exhibit.

Symptoms.—"In this disease, the first change observed in the eye is a partial irregularity of the pupillar margin of the iris, at one or more points. This irregularity of the margin of the iris alters, of course, the form as well as the size of the pupil. In some cases, it is more dilated, and in others more contracted, than natural. The iris loses its proper colour; and its pupillar margin becomes partially or wholly drawn backwards, in consequence of its partial or complete adhesion to the capsule of the crystalline lens. The motions of the pupil, at the same time, become impeded, in proportion to the number and extent of the adhesions. In some cases, the adhesion of the iris takes

place to a considerable extent, at one point; in other cases, the adhesion takes place to a smaller extent, at several points, which, in the progress of the affection, by extending, become one continued adhesion, involving the greater part or the whole of the pupil. That part of the iris between the adhesion and the ciliary margin, assumes a convex form, by projecting to a greater degree, at this part, towards the cornea, than it does in its healthy state. By this projection, the size of the anterior chamber of the aqueous humour is diminished, and that of the posterior chamber is proportionably increased.

"Where the iris adheres to the capsule of the lens, an effusion of lymph may, in general, be observed, forming the connecting medium. The capsule of the lens generally becomes opake; and frequently small portions of lymph, and sometimes of pigment, from the posterior surface of the iris, can be seen upon this capsule. In some cases a deposition of lymph takes place upon the inner surface of the cornea, occasioning a dimness and opacity of this part. Vision gradually becomes impaired, as the disease advances, till it is quite destroyed. And this last symptom (impaired vision) is commonly the only one by which the patient is conscious that mischief is going on in the eye.

"The progress of chronic inflammation of the iris is remarkably slow and insidious, having been reported, in several cases, to have continued for many years, gradually destroying the sight; and that, too, notwithstanding the employment of various remedies to arrest its progress. In some cases is has appeared to take place after an attack of acute inflammation of the eye; and in others after rheumatic complaints.

"Chronic inflammation of the iris is not, in general, attended with either pain, intolerance of light, external redness, or any other symptom which marks the presence of acute inflammation. In two cases, however, where the patients were young women of irritable constitutions, the eyes, both of which were affected in each of the cases, were attacked, at different times, in the progress of the disease, with acute inflammation in a slight degree. These states of excitement were marked by a slight redness upon the white part of the eyeball, which took place every three or four days. This state of acute inflammation continued only for about one day at each attack, when it again subsided.

"In several cases the cornea became more prominent than natural, approaching to the state called hydrophthalmia; and, consequently, the focus of vision was so altered, that sight became confused and indistinct.

Treatment.—"It is regretted that nothing satisfactory can be said here, regarding the treatment of this chronic inflammation of the iris. All that will be remarked at present, therefore, is, that, although several of the patients affected with this disease were, or had been, treated by courses of mercury, the remedy considered most likely to arrest its progress, this desired event did not take place."

Dr. C. J. B. Williams *on Respiration and Animal Heat.*—This difficult part of physiology, Dr. Williams has taken up with some acumen, and has devised several experiments to meet objections raised by those who espouse the opinions of Ellis, founded on the Lavoisieran doctrine. For example:—

Experiment—"Thermometer 62°, barometer 29 inches.—580 grains of venous blood were introduced into a rabbit's bladder, weighing exactly three grains, the neck being secured by a ligature; the bladder was then suspended in a receiver, containing 100 cubic inches of atmospheric air standing over mercury, and was preserved in that situation two days. The air suffered no sensible change of bulk; but much moisture had been deposited on the sides of the jar, and a considerable quantity of serum had transuded through the bladder. (Temperature the same, and barometer 29.15 inches); one cubic inch of this air was found to contain .065 of carbonic acid gas. Deducting the .005, which atmospherical air usually contains, we may ascertain the quantity formed in the experiment. Then 0.065—005 × 100=6 cubic inches. Now, six cubic inches of carbonic acid gas, at this temperature and pressure, contain very nearly 0.79 of a grain of carbon. Therefore the 100 cubic inches of atmospheric air had acquired 0.79 of a grain of carbon. The bladder, after being carefully washed and dried, was found to weigh 2.75 grains, having lost only 0.25 of a grain. Here we find, then, that three times the quantity of carbonic acid was formed which could be accounted for, from the loss in the weight of the bladder. We must therefore necessarily conclude, that part must have been derived from the blood in the bladder, and that the interposition of its coats did not impede the action between the air and the blood.

"The experiment was repeated with 1200 grains of venous blood in a rabbit's bladder, weighing 5.5 grains, with 100 cubic inches of atmospheric air. After making necessary reductions for slight differences in temperature and pressure, I found, in the same manner, that the air had acquired .075 carbonic acid gas, which contains .9875 of a grain of carbon, and that this must have been derived from the blood, and in some way [have] pervaded the bladder.

"These facts, compared with the discoveries of Magendie, Ségalas and Fodéré, and the observations of Drs. Christison and Coindet, relating to the permeability of living membranes to fluids, leave in my mind no doubt, that the access of the air to the blood is direct. The bronchial mucus which, as we have before noticed, possesses a property of absorbing oxygen, and yielding it again to other substances, may promote the action, by forming a medium, through which the oxygen becomes transferred to the blood. The changes produced in air contained both in serous and mucous cavities, recently investigated by Dr. Davy, confirm this opinion.

"From these experiments it appears, that the removal of carbonic acid is not alone sufficient to prepare venous blood for its uses in the body; for it is well known, that no air, void of oxygen, will support

life. The peculiar colour of arterial blood must likewise be attributed to the presence of oxygen; for no other gas has a similar effect, although azote and hydrogen, when respired, extricate carbonic acid gas. One of the best arguments in support of the opinion, that the carbonic acid of respiration is formed in the lungs, has been the supposed coincidence of the bulk of carbonic acid produced, and oxygen disappearing; but this is refuted by the experiments of Edwards, which shew, that this coincidence is not by any means uniformly observed in man, and seldom exists in the respiration of other animals; more oxygen always disappearing than the carbonic acid produced accounts for.

"*Experiment* VIII.—This was performed partly with a view to ascertain the respective share which respiration and galvanism may have in generating heat. Temperature of room 48°. The subject was a common cock. Heat in the rectum 107½°; and ten minutes after adjusting the tube 106°. Decapitation was performed. A galvanic power excited by from 12 to 24 plates weakly charged, causing slight contraction of the muscles of the wings, was occasionally applied. The periods at which the galvanism was used, with the respiration and heat, are noted in the following table:

Time. Heat.	Time. Heat.	Time. Heat.
R. .....In 1′...105°	R. & G...16′...105°	R. .....30...103°
R. ..... 5...104	R. & G...18...105	R. .....33...102½
R. & G.... 7...105	R. & G...20...106	R. & G....35...102
R. & G.... 9...106	R. & G...22...106	R. & G....37...102½
R. & G.... 10...106	R. & G...25...105½	R. & G....40...102
R. ..... 12...106	R. & G...27...105	
R. ..... 14...105½	0 0...27...104	

"As the artificial respiration was here uniformly kept up for the first 29′, the variations in temperature during that time must chiefly be ascribed to the galvanism, the applications of which were distinctly and uniformly succeeded by a rise of temperature. The depression which followed on the cessation of both galvanization and respiration, was such that the original heat was not recovered.

"From a consideration of all the facts which I have now stated, I am led to the belief that animal heat is the result of chemical changes proceeding in the blood, and which I have endeavoured to particularize as those resulting from the functions of *respiration and secretion*, and that a due performance of these functions is requisite for the healthy and uniform preservation of animal temperature."

Dr. Alison *on the Physiological Principle of Sympathy.*—The discoveries lately made with regard to the functions of particular nerves, by Mr. Charles Bell and others, have led Dr. Alison to investigate the principles to which these lead, and the theories founded upon them by the discoverers themselves. This investigation has brought him to the conclusions that what are called sympathetic actions are, in general, actions caused by

sensations, and that no anatomical explanation can be given of the fact, that certain sensations act upon certain nerves only. We cannot afford room to give an extended analysis of this learned article but we shall advert to what appears to be most interesting, though we can scarcely compliment Dr. Alison on much novelty of matter. On the subject of the influence of the mind over certain actions denominated sympathetic, Dr. Alison says :—

"I am quite convinced, from observation, that the action of sighing is to be explained, as Dr. Darwin, I believe, first suggested, on the same principle. When our attention is occupied by a train of thought, or mental emotion, of intense interest, to use the language of Darwin, we for a time forget to breathe; at least, the sensation which we here suppose to be the natural stimulus to the act of inspiration, being comparatively unheeded, and little felt, the action is performed less frequently, and less perfectly than usual. In consequence, a degree of stagnation of blood in the lungs takes place; and then, on the first interruption of the engrossing train of thought, the sensation resulting from the presence of venous blood in the lungs is felt in unusual force, and an unusually full inspiration naturally follows. Hence, many persons may be observed to sigh deeply immediately on finishing the reading of an interesting story, or hearing the termination of an interesting speech, to which they had been listening with what may literally be called breathless attention. Every one must have observed the coughing and sneezing which, in a crowded assembly, on a winter day, infallibly succeed the profound silence occasioned by a speech of uncommon brilliancy and interest; and which imply, that the causes of the sensations preceding these actions had existed for some time in many of the audience, but the sensations having been overpowered by other and more predominant feelings, their natural consequences had been suspended, until these feelings had in some measure subsided, and allowed the irritations in the air-passages to become objects of attention to the mind.

"The same principle might be illustrated by reference to other well known facts, particularly in regard to the excretion of urine. It might be illustrated also, by reference to the remarkable effect of mental excitement, as during paroxysms of mania, in preventing the sympathetic effect on internal organs, of cold applied to the surface. Farther, they might be illustrated by reference to the effects of the remedies which are used with the intention of directly stopping or controlling such actions as we have here referred to sensations, when they exist in an inordinate degree. "Hungary water, or volatile spirits," says Dr. Whytt, "drawn strongly into the nose, will often stop a tickling cough, and laudanum taken by the mouth, or given by glyster, will lessen or remove the sympathetic vomiting, arising from a stone in the gall-ducts, kidneys, or ureters, and the violent contractions of the diaphragm, and abdominal muscles, occasioned by a tenesmus or strangury." In this sen-

tence, Dr. Whytt has briefly stated the two principles on which I believe almost all those remedies act, which directly relieve excessive or spasmodic actions of the sympathetic kind; the one by exciting new sensations, which obscure or overpower, according to the principle that has been stated, those which appear to be the immediate cause of the inordinate actions; the other, by blunting sensibility itself, and so controlling the effects of sensation. The efficacy of expedients of both kinds, in checking such actions as those of coughing, sneezing, vomiting, and tenesmus, may fairly be stated as strong evidence of the necessary dependence of these and other sympathetic actions on sensation."

In opposing the conclusions drawn from the recent discoveries, Dr. Alison very acutely remarks—

"That as we now know that nerves, possessing very different functions or endowments, may be bound up in the same sheath, and receive the same name from anatomists, it is probable that all parts, which are susceptible of different sensations, have in reality different nerves corresponding to these; that one of these nerves acts when one sensation is excited; and another when another is excited; and that one of these may have connexions with one set of muscles, and another with another set.

"This would lead us, however, into a set of assumptions not only perfectly gratuitous, but irreconcilable with fact. We should be obliged to suppose, for example, that there are bound up in what is commonly called the Olfactory Nerve, one nerve destined to the perception of nauseous smells, and connected with the nerves of the diaphragm and abdominal muscles; one for the smells that cause faintness, connected with the nerves of the heart; and one for savoury smells, connected with those of the salivary glands. And, in the fifth pair of nerves, we must suppose that there are bound up, one nerve for the perception of cold, applied to the face, and connected with the phrenic and intercostal nerves, by which the act of inspiration is performed, and also with the cutaneous nerves of the whole surface, by which a general constriction of the capillaries is produced; one for the perception of irritations of the nostrils, connected with the phrenic and lower intercostals, and lumbar nerves, by which the act of sneezing is performed; and one for the perception of pain, in the eye-ball, cheeks, or teeth, possessing little or no connexion with any of the respiratory nerves; and so in other instances.

"We know that a nerve of sense, and one of motion, or one capable of controlling vascular action, do not, by reason of arising from the same immediate neighbourhood, or of being bound together in the same sheath, possess any power of affecting each other sympathetically; for no impressions made on that portion of the fifth pair which gives common sensation to the ball of the eye, nose, and cheek, necessarily throw into action the elevator muscles of the lower jaw, which are supplied by the motor branch of the fifth. Impressions on the sensitive branches of the fifth throw into action, in preference, the distant nerves which supply the diaphragm and intercostal muscles. And the lachrymal

branch of the fifth is no more affected by irritations of those branches of the same nerve, which supply the cheek, teeth, or tongue, than by irritations of any other parts of the body. Again, although the top of the shoulders derives sensation from the same cervical nerves as give origin to the phrenic; yet, a blister applied to that part, as Dr. Whytt observes, occasions no action of the diaphragm.

"It is equally plain, that different motor nerves, by being intimately interwoven with each other in a plexus, do not necessarily require the tendency to act together, or in any determinate succession; otherwise all the muscles, supplied by the portio dura, would have a tendency to act together, which we know is not the case; there being not only no tendency to simultaneous action of those about the mouth and eyes, in voluntary motion, but none under the influence of certain sensations; for example, that of bright light acts on the orbicularis oculi only, while that of dyspnœa hardly affects this muscle. And, farther, if the tendency to simultaneous action were given by this cause, this tendency would be observed in all the muscles of the arm, supplied from the axillary plexus, and in all those of the thigh and leg, supplied from the sciatic nerve."

His opposition to Mr. C. Bell's theory of the respiratory system of nerves, is founded upon the following considerations, which he has illustrated with considerable ingenuity and knowledge of anatomy.

"1. That no bond of connexion has been ascertained, at the roots of the nerves which Mr. Bell has designated as respiratory, which does not extend to other nerves, not included, nor possessin g any claim to be included, in that system.

"2. That the nerves which he includes in this system are easily excited into action by irritations not acting on any of their own number; and that the muscular actions which these nerves excite are occasionally associated with others, equally foreign to the system.

"3. That the component parts of this system of nerves have no peculiar or necessary tendency to simultaneous action; but that in obedience as would appear, to different sensations, emotions, or instinctive impulses of mind, the same nerves are thrown on different occasions, into very various combinations and successions of action, sufficiently indicating that, when they do act simultaneously, it is not by reason of a permanent anatomical cause.

"The examination of this system, therefore appears to me to confirm, rather than invalidate, the views of the great physiologists of the last age, in regard to the nature of sympathetic actions. We have seen evidence sufficient, as I think, to induce us to acquiesce in the proposition, that these actions most generally depend on the excitation of particular sensations. *In order that these sensations may be felt*, the nerves, from the impressions on which they proceed, must be entire up to the brain; *but when they are strongly felt*, their influence extends, or is reflected downwards, often to parts of the nervous system remote from those in which they originated. Each acts as a stimulus, or ex-

cites an involuntary instinctive impulse, which acts as a stimulus, of particular muscles only;—and we cannot tell why. This was the doctrine of Whytt, of Monro, and of Haller. Modern physiologists have rendered it somewhat more precise, only by determining the portions of the encephalon which appear essential to the sensation, and those actions of nerves in consequence of them taking place. Farther than this, in the explanation of sympathetic actions, I cannot go; and I will venture to maintain, that whosoever does go farther, goes on hypothesis, and will find himself opposed by facts.

Nor does it appear to me, that the fact of the peculiar action of certain sensations on certain muscles only, is one for which it is likely that we shall ever be able to assign a reason—or which it would be any great hardship to be obliged to regard as an ultimate fact in physiology."

Dr. Christison *on poisoning with arsenic.*—In a former Number we mentioned a paper by the author on this subject objecting to liquid tests as fallacious and doubtful. In the present article, he has followed up his investigation of arsenical tests and has shown, at least to his own satisfaction, that metallic reduction is the most certain and satisfactory and that it can be performed with very small quantities; and also that the symptoms themselves when carefully observed may lead to a very strong inference though not an absolute certainty of arsenic having been taken into the stomach. The first case given by the author relates to the analysis of part of the contents of the stomach of a man suspected to have been poisoned, and three months after his death

"The substance transmitted was a thick, slightly viscid, putrescent, dirty-gray fluid, with a few floating coagula; and it amounted to an ounce and a quarter. It was poured into a porcelain vessel, diluted with the washings of the phial, boiled briskly for fifteen minutes, and thus changed into a transparent liquid, with dirty ash-gray flocks suspended in it. The solid matter being separated by filtration, a clear fluid was obtained, of a very pale, straw-yellow colour.

"A small portion of this fluid was tested with lime-water, and the ammoniacal nitrate of silver. Lime water caused a very scanty, dirty grayish-white, flocculent precipitate. The ammoniacal nitrate of silver caused a copious, dirty-grayish-white, pulverulent precipitate, without the slightest tint of yellow.

"As the arsenic, if present at all, evidently existed in very minute proportion, and the fluid was so composite as to render the foregoing tests inconclusive; instead of wasting any more of it upon trials with the other liquid reagents, the whole of the remainder, with the washings of the filter, was acidulated with acetic acid, and subjected for fifteen minutes to a stream of sulphuretted hydrogen gas. It acquired, in consequence, a deeper yellow colour, and muddy appearance; which, when the excess of sulphuretted hydrogen was driven off by ebullition, gave place to a considerable precipitate, of a pale lemon-yellow colour, and composed partly of fibrous flocculi, partly of very minute, brilliant

scales *. The presumption that arsenic existed in the fluid was thus strong.

" Next morning the precipitate having fallen down, the supernatant fluid was withdrawn with the pipette, and its place supplied with distilled water. The brilliant scales then became more distinct. The operation of subsidence and affusion being repeated the same day, the precipitate was thrown upon a filter; and next morning, when the water had passed through, the filter was compressed, and partially dried between folds of bibulous paper. The moist precipitate was then removed, dried in fragments with a gentle heat, dropped into the bottom of a tube, and covered with a little black flux, which was dropped through a paper tube, so as not to soil the glass. The whole material just filled the ball at the end of the tube. Heat was then cautiously applied with a very small spirit-lamp-flame. Some water disengaged at first, was removed with a roll of filtering paper. On the farther application of heat, which was raised to full red, a distinct crust was sublimed into the narrow part of the tube. It was smooth, bluish-gray, and brilliant, like polished steel externally; crystalline, sparkling, and iron-gray internally, like the fracture of fine steel.

" The proof of the existence of arsenic was thus decisive. For no other known substance can yield, with sulphuretted hydrogen, a yellow precipitate, from which such a metallic crust can be sublimed. But as I was fully sensible of the influence which the foregoing analysis would have on the issue of the trial, I resolved to leave nothing undone to establish the nature of the crust precisely. For this end I subjected it to a test of great delicacy, elegance, and facility of application, and vastly superior in every respect to the supplementary test recommended in my former paper. It was suggested to me by my friend Dr. Turner, and, as far as I know, has not yet been made public. The portion of the tube containing the flux being removed by melting and drawing it out, the crust was driven up and down by the spirit-lamp flame. At first it kept its polish and iron-gray colour. But at length it was all converted into little detached crystals, white, translucent, of adamantine lustre, and evidently shewing triangular facets under a microscope of four powers. These crystals, I need hardly add, were octaëdral crystals of oxide of arsenic. The tube was weighed before and after the crystals were washed out with distilled water; and their weight thus proved to be one-twentieth of a grain.

" The solution, amounting to a drachm, was divided into three portions, and subjected to the ammoniacal sulphate of copper, the ammoniacal nitrate of silver, and sulphuretted hydrogen. These tests all gave pointed indications; but it required very cautious management to make them distinct.

" This analysis left no doubt that the deceased had taken arsenic; and as the symptoms and mode of death, as well as the morbid appear-

* This appearance of brilliant scales is not often produced when the quantity is small. The operator will have the best chance of obtaining it, if the excess of gas be driven off by a very gradually increasing heat.

ances, corresponded with what arsenic is known to produce, I could not hesitate to ascribe his death to its administration."

Another case, in which Dr. Christison performed the analysis was that of a girl four days after her death and three after her funeral.

" The contents of the stomach were evaporated to a third of their volume, and filtered. The fluid, which had a very pale straw-yellow colour, gave a scanty, grayish-white cloud, with lime-water; a copious, dirty, grayish-white precipitate, with the ammoniacal nitrate of silver; and underwent no change with sulphuretted hydrogen. These tests, therefore, did not give any indication of the presence of arsenic. The remainder was evaporated to the volume of half an ounce, when it acquired a brownish-red colour. In this state, when treated as in the former case with sulphuretted hydrogen, it gave an evident brownish-yellow, flocculent precipitate; which, however, was so scanty, that, before proceeding further, I thought it right to wait for the result of the analysis of the stomach itself.

" Accordingly, the stomach was cut into small fragments, and boiled briskly, for half an hour, with a pint of water, in a porcelain basin, glazed with porcelain. The larger masses of solid matter were then removed, and the fluid filtered. One-half of it passed through in two days, and was subjected to analysis by sulphuretted hydrogen, after previous concentration to the volume of half an ounce. A dirty lemon-yellow precipitate was thus obtained, amounting apparently to twice the volume of that procured from the contents. As I was sure I had now got enough to try the test of reduction, I mixed the two precipitates, and, following the course pursued in the former case, I obtained precisely the same results. The quantity of oxide eventually formed I did not weigh; but it was certainly not greater than a twentieth of a grain. The whole quantity of oxide, including what was in the contents, and in that part of the decoction of the stomach which was not filtered, could not have surpassed a fifteenth of a grain.

" The analysis, together with the symptoms, left no doubt that the girl had died of poisoning with arsenic.

" By any other method of analysis, particularly by those practised in Britain, there is good reason for believing that the poison would not have been detected. I need scarcely point out, therefore, how important it is that the proposed method should be minutely examined, and become generally known. In my own hands it has hitherto proved susceptible of universal application, and of yielding the most positive proof in the most unlikely circumstances; and I am satisfied, that, in the hands of another, it will prove easy of application, though he should be neither a very adroit, nor a very practised operator.

" It is not too extravagant to assume, that had the process been earlier known, several late judicial cases would have been made perfectly clear, which, for want of good chemical evidence, have excited a considerable ferment in the public mind, and thrown our courts into doubt

and embarrassment ; and that henceforward we shall not often hear of criminals escaping from justice, because the medical witness could not discover the poison.

" I have said that I have hitherto found this method susceptible of universal application. I can foresee the possibility of one difficulty, however. If the fluid containing the arsenic is ropy and viscous, even after being boiled and acidulated with acetic acid, the sulphuret thrown down may be mingled with so much animal matter, that the metallic sublimate is not distinctly formed, on account of the great quantity of empyreumatic matter suddenly projected along with it. This has happened to me once only out of at least a hundred experiments. In that case an addition must be made to the process. The criterion by which we may know that the additional process is required, is the colour of the precipitate. If the colour is lemon-yellow, or pale brownish-yellow, it is unnecessary; if it is cream-white, the simple process will probably fail. The plan I should prefer is a modification of that proposed by Berzelius, and of the method followed by Roloff for determining the quantity of arsenic in the sulphureous precipitate. Treat the precipitate with nitric acid, and thus convert the sulphuret into sulphuric and arsenic acids; dissolve and filter; neutralise with ammonia, and throw down the arsenic and sulphuric acids with nitrate of lead ; reduce the precipitate, which contains arseniate of lead, in the usual way."

Dr. DILL *on Cutaneous Absorption.*—Since the experiments of Drs. Christison and Coindet, which show the permeability of living membranes by fluids, the anatomical difficulty respecting cutaneous absorption has vanished. Dr. Dill has given some very curious and striking facts in illustration of this, and has instituted several apposite experiments in illustration.

" I cannot," he says, " perhaps adduce a more remarkable illustration of the power which the absorbents of the skin are found occasionally to exert, than by referring to the phenomena that occur in diabetes. In some cases which I have seen, the quantity of urine secreted by the kidneys, during the space of many months, bore no proportion to the ingesta during the same period. In one, the patient's urine exceeded, for five weeks every twenty-four hours, twenty-four pounds, while his ingesta, during the same time, never surpassed twenty-two pounds. How, then, I would ask, are we to explain this excess of urine? Not certainly by his ingesta, since his daily discharge of urine, independent of all his other excretions, exceeded them by two pounds and more. Neither can we account for it, upon the principle of bodily decomposition. Had the increase of urine in this case, been confined to merely a few days, we might attribute it to the conversion of the constituent elements of the system into urine ; but as this peculiar symptom only terminates with the complaint, no quantity of adipose, or other substance within the body, could present the disordered kidneys with sufficient pabulum. This patient, at the com-

mencement of the disease, weighed about 145 pounds; and being weighed after the expiration of five weeks, when he died, twenty-seven pounds of loss were found to have been sustained. But his daily excess of urine over his ingesta during the same period averaged nearly five pounds; consequently, the difference between his urine and ingesta during the thirty-five days of his disease, comes to 140 pounds. When the twenty-seven pounds that he lost in weight are subtracted, 113 pounds of urine will remain unaccounted for. Cutaneous absorption, I think, presents us with the only and proper solution of this difficulty. I do not maintain, indeed, that the absorbents of the skin are, independent of the proper ingesta, the only medium through which the urinary organs receive their proper supply of fluid. It is evident, from the emaciation which takes place in this disease, that the absorbents within are as active as those on the surface of the body, and that the constituent principles of the system itself are broken down, decomposed, and carried to the kidneys; but the facts above stated shew, that the whole excess of urine above the ingesta cannot be thus explained.

"From experiment and observation we consider ourselves sanctioned in drawing the following conclusions. In the first place, that the body in general increases in weight, while in the bath; secondly, that when its weight is unaffected by immersion, something must have been absorbed by it, to answer the natural expenditure of the system, which has been apparently suspended during the experiment; thirdly, that when its weight is diminished, this arises either from an inactive condition of the cutaneous absorbents, or from the temperature of the bath being so high as to accelerate the action of the heart and arteries, and thus increase the perspiration; fourthly, that the additional weight acquired during immersion cannot be accounted for, either on the supposition of an increased pulmonary inhalation, or of a diminished evacuation by the skin; and, lastly, that the most simple and satisfactory method of accounting for this increase of weight, is by admitting the doctrine of cutaneous absorption."

Dr. Anderson *on Tobacco in Tetanus.*—We stated the substance of Dr. Anderson's treatment in a former Number. He has in the present paper given additional cases of its efficacy.

"One circumstance in the exhibition of the baths and enemata prepared from either kind of the nicotiana was particularly striking, viz. the difficulty of inducing the collapsing effect of the medicine upon the subject of tetanus—an effect so easily produced by tobacco upon the body in health. In this respect, it became necessary to disregard any specific quantity of the medicine, and be entirely regulated by its effects, as in blood-letting in inflammatory disorders.

"As a general rule, four pounds of the dried plant may be boiled for an hour, in eight gallons of water, and used to impregnate the tepid water of a bath.

"A failure in one instance opposed to six cases of successful exhibition of the remedy, under my own observation, is at least encouraging;

and will satisfy the unprejudiced and liberal part of the profession, that this mode of treatment, if not specific, is at least deserving of trial."

Mr. Brown's *Case of Chronic Gastritis.*—This is a well marked case of the complaint so well described by Dr. Abercrombie, in the Edinburgh Journal, No. 78. Mr. Brown blames himself for directing his treatment at first under the notion of it being a functional, rather than a structural disorder, and allowing it to proceed to its incurable organic stage; but it was an error into which the most skilful and experienced might have been betrayed. We shall give the whole case, as it is narrated by the author.

"Mrs. C., aged forty, placed herself under my care in the end of August 1825. About a month previously she was exposed to cold while sweating, and had complained ever since. She was troubled with a costiveness, for which she had frequently taken purgatives. I prescribed some remedies, which benefited her, but still she continued unwell. Upon the 7th of September, the symptoms noted were pain in the stomach, immediately after taking food, without vomiting, or at least without constant vomiting, and pain on pressing the epigastrium. These symptoms continued almost unabated till her death, on the 23d of November.

"Instead of burdening the Society with a journal. I shall merely state, that pain, on receiving food or drink into the stomach, was the leading feature in the case, and, indeed, the only unvarying one. The pain, on pressing the epigastrium, was sometimes less severe, sometimes more acute; or, as she described it, a burning pain. In the course of her illness, there supervened pain lower down, about the umbilicus, and she could easily distinguish this from the original pain. Vomiting was only an occasional symptom, and was sometimes resorted to by her, for the purpose of relieving the stomach of its contents. The bowels were generally costive, and required the frequent use of purgatives and enemata; but at intervals diarrhœa came on, which was very distressing during the latter period of her life. Her pulse was seldom quicker than ninety. She perspired a great deal, but had no other symptom of hectic fever. Her appetite continued excellent till within a few days of her death, but she ate very little; and, from the comparative ease she experienced when the stomach was empty, said she was sure she would be quite well if she could do without food. The emaciation was extreme.

"A few days before her death, a small circumscribed swelling was observed, lying over the region of the pancreas, having the regular pulsation of the aorta throughout, and thus leading to the idea of aneurism, or of diseased enlargement of that viscus.

"She was twice or thrice leeched and blistered, and had the antimonial ointment applied, but without any marked good effect. She twice used the blue pill, to the extent of slightly affecting her mouth, and said she was easier at both times. Bitters and chalybeates were used

without any advantage. Opium gave her relief in all the stages of the complaint.

"The body was examined thirty hours after death, and the appearances were very unexpected. The peritonæum, intestines, liver, spleen, pancreas, and aorta, were quite healthy, and the mucous membrane of the stomach was alone diseased. This was in every part thickened and vascular; it had more of the velvety feel, and, at the same time, was more firmly adherent to the other coats, than is observed in the healthy organ. There was a small body, resembling in colour, shape and consistence, a spleen in miniature, lying near the proper spleen. This occurs occasionally, I believe, as an anatomical variety, but cannot be called a morbid appearance."

ART. VII. *The Book of Nature, by* JOHN MASON GOOD, M.D. F.R.S. 3 vol. 8vo. London, Longman and Co. 1826.

Though the whole of this very erudite and elegantly written work, does not strictly fall within the province of the Medical Reviewer, yet as more than two-thirds of it is physiological, and the rest connected in part with the laws and principles which relate to a knowledge of animal life, we think it important to introduce it to our readers, and particularly as it comes from the author of the Study of Medicine. It will be recollected, that this Journal was alone in praising the Study of Medicine when first published, and the success of the work, which has reached a fourth Edition in America, has even gone beyond our anticipations. Had this been more in the form of a systematic or elementary treatise on physiology, we should have been equally sanguine as to its circulation in the profession; but in its more popular shape, it is likely to attract a greater number of general readers, though the professional inquirer will find few works on physiology so perspicuously and elegantly written, and constructed upon so clear and simple an arrangement.

The three volumes comprise three distinct series: the first, "Nature of the Material World; and the scale of unorganized and organized tribes that issue from it:" the second, "Nature of the Animated World, its peculiar powers, and external relations; Means of communicating Ideas; Formation of Society: the third, "Nature of Mind; its general Faculties and Furniture." We shall illustrate the manner in which Dr. Good has treated each of these series. In the first series, amongst much interesting matter on animal life, irritability, &c. we find the following

account of the secretion of lime, both naturally and preternaturally.

"Though gelatine and albumen are unquestionably animal productions, the one a secretion from the blood, and the other a constituent principle of it, there is a doubt whether lime ought ever to be regarded in the same character. A very large portion is perpetually introduced into the stomach from without. In our lecture on the analogy between the structure of plants and of animals, I had occasion to observe, that it forms an ingredient in common salt; not, indeed, neeessarily so, but from the difficulty of separating the other ingredients from their combination with it: yet it enters not more freely into common salt than into almost every other article, whether animal, vegetable, or mineral, of which our diet is usually composed. And upon this common fact it is more generally conceived, at present, to be a substance communicated to the animal frame, than generated by it.

"This opinion, however, is by no means established; and there are many circumstances that may lead us to a contrary conclusion. Though almost every kind of food contains some portion of lime, it by no means contains an equal portion; and yet we find that a healthy young animal, whatever be the sort of food on which it is fed, will still provide lime enough from some quarter or other to satisfy the demand of its growing bones, and to maintain them in a due degree of solidity and hardness.

"Again, the soil of some countries, as the mountains of Spain, for example, consists almost entirely of gypsum, or some other species of limestone; while in other countries these are substances very rarely to be met with. It is a curious fact, that in that vast part of the globe which has been latest discovered, and to which modern geographers have given the name of Australia, comprising New Holland and the islands with which its shores are studded, not a single bed or stratum of limestone has hitherto been detected, and the builders are obliged to make use of burnt shells for their mortar, for which I have lately advised them to substitute burnt coral. Now, it would be natural to suppose, that the animals and vegetables of such a country would partake of the deficiency of its soil, and that the shells and bones which it produces would be less compact in their texture than those of other countries; yet this supposition is not verified by fact: nature is still adequate to her own work; the bones of animals are as indurated and perfect in these regions as in any parts of the old world; while the shells are not only as perfect, but far more numerous; and the frequent reefs of coral, altogether an animal production, that shoot forth from the shores in bold and massy projections, prove clearly that a coral rock, largely as it consists of lime, forms the basis of almost every island.

"The prodigious quantity of lime, moreover, that is secreted by some animals at stated periods, beyond what they secrete at other times, seems to indicate a power of generating this earth in their own bodies. The stag, elk, and several other species of the deer tribe, cast their antlers annually, and renew them in full perfection in about twelve

weeks. These antlers are real bones; and those of the elk are sometimes as heavy as half a hundred pounds weight; and in a fossil state, in Ireland, have been dug up still heavier, and of the enormous measure of eight feet long, and fourteen feet from tip to tip: on beholding which, we may well, indeed, exclaim with Waller,—

O fertile head! which every year
Could such a crop of wonders bear.

"In like manner, many species of the crab and lobster tribes annually throw off and renew the whole of their crustaceous covering, and apparently without any very great degree of trouble. The animal at this time retires to some lonely and sheltered place, where, in its naked and defenceless state, it may avoid the attack of others of the same tribe which are not in the same situation: a line instinctively drawn now separates the shell into two parts, which are easily shaken off, when the secernent vessels of the skin pour forth a copious efflux or sweat of calcareous matter all over the body, the more liquid parts of which are as rapidly drunk up by the absorbent vessels, so that a new calcareous membrane is very soon produced, which as speedily hardens into a new calcareous crust, and the entire process is completed in about a fortnight. This genus, also, in many of its species, is capable of reproducing an entire limb, with the whole of its calcareous casing, whenever deprived of it by accident or disease, or it voluntarily throws it off, as I have already observed it is capable of doing, to extricate itself from being seized hold of; though the new limb is seldom so large or powerful as the original. So, in other animals we sometimes find a large and preternatural secretion of calcareous matter, in consequence of a diseased habit of particular organs, or of the system generally. The human kidneys are too often subject to a morbid affection of this kind, whence a frequent necessity for one of the most painful operations in surgery. The chalk-stones, as they are erroneously called, that are often produced in protracted fits of gout and rheumatism, are rather lithate of soda than any compound of lime; but instances are not wanting in which one of the lungs has been found converted into an entire quarry of limestone.

"In the Transactions of the Royal Society there are several cases related of young persons who, in consequence of a morbid habit, threw out a variety of calcareous excrescences, either over the hands and feet, or over the whole body; and about four years since, a Leicestershire heifer was exhibited for a show in this metropolis, the head and neck of which were completely embedded in horny excrescences of this kind, and the back and limbs profusely sprinkled over with them: some of the horns, and especially those about the dew-lap, were as long and as large as the natural horns of the forehead, but they were much more calcareous and brittle. A calcareous scurf, moreover, was secreted over every part of the skin, which, whenever the skin was scratched or bitten, united with the fluid that oozed forth, ramified, and divaricated into masses of small roses. At the request of the proprietor, I took an account of this extraordinary animal, and have since communicated it

to the Royal Society. In all other respects it was in good health; its size was proportionate to its age, and its appetite enabled it to digest foods of every kind equally; and though, in consequence of this, its diet had been frequently varied, the propensity to a secretion of calcareous matter continued the same under every change.

"It appears, therefore, very doubtful whether the animal economy be not at times capable of generating lime, as well as gelatine or albumen, out of the different materials introduced into the stomach in the form of food. Vauquelin endeavoured to decide the question by a variety of experiments upon the nature of the egg-shells of a sitting hen, and an examination into the proportion of calcareous matter contained in a given weight of shells, compared with the calcareous matter furnished by her food, and that discharged as a recrement; and so far as these experiments go, they support the opinion of a generation of lime, and that in very considerable abundance, the weight secreted appearing to have been five times as much as that introduced into the stomach. But to determine the question incontrovertibly requires so nice a precision in the mode of conducting such experiments, as, from a variety of circumstances, it seems almost impossible to attain.

"It is to the power which the living principle possesses, either of secreting or generating the substance of lime by its natural action, that we are indebted for all those elegant shells that enrich the cabinet of the conchologist, and seem to vie with each other in the beauty of their spots, the splendour and irridescence of their colours, and the graceful inflection of their wreaths. And it is to the power which the same principle possesses, of forming this substance by a morbid action, that we owe not only those unsightly excrescences I have just mentioned, but some of the most costly ornaments of superstition or luxury: those agate-formed beozards which in Spain, Portugal, and even Holland, were lately worn as amulets against contagion, and which have been let out for hire at a ducat a day, and been sold as high as three hundred guineas a piece; and those delicate pearls which constitute an object of desire among the fair sex of every country, and which give additional attraction to the most finished form.

"The first are usually obtained from the stomach or intestines of the goat or antelope; in the latter case being called oriental bezoards, and possessing the highest value. The most esteemed are those obtained from the stomach of that species of the oriental antelope called the gazelle, to which the Persian and Arabian poets are perpetually adverting whenever they stand in need of an image to express elegance of form, fleetness of speed, or captivating softness of the eyes. The second are obtained from the inside of the shells of the mytilus *margaritiferus* and mya *margaritifera*, pearl-muscle and pearl oyster; the former producing the largest and consequently the richest, is found most commonly on the coast of Ceylon; the latter not unfrequently on that of our own country, and was traced some centuries ago in great abundance in the river Conway in Wales. Linnæus is said to have been acquainted with a process by which he could excite at pleasure a secretion of new pearls

in the pearl-oysters which he kept in his reservoirs. It is generally supposed to be a diseased secretion, somewhat similar to that of the stone in the human bladder.

"The murex tritonis, or musical murex, is here also worth noticing. Its calcareous shell is ventricose, oblong, smooth, with rounded whorls, toothed aperture, and short beak, about fifteen inches long, white, and appearing as if covered with brown, yellow, and black scales. It inhabits India and the South Seas, and is used by the New Zealanders as a musical shell, and by the Africans and many nations of the East as a military horn.

"Before we quit this subject, I will just observe, that it is to the same tribe we are indebted for our nacre or mother-of-pearl, which is nothing more than the innermost layers of the shell, in which the morbid works or concretions which we call pearls, lie imbedded; and that to the same order of shells the Indians owe their wampum or pieces of common money, which are formed of the Venus *mercenaria*, or clam-shell, found in a fossil state; and that our own heralds owe the scallop ostrea *maxima*, that so often figures in the fields of our family arms, and was formerly worn by pilgrims on the hat or coat, in its natural state, as a mark that they had crossed the sea for the purpose of paying their devotions at the Holy Land.

"From these facts and observations we cannot but behold the great importance of lime in the construction of the animal frame, the extensive use which is made of it, and the variety of purposes to which it is applied: combined in different proportions with gluten and albumen it affords equally the means of strength and protection, produces the bones within and the shells without, the external and internal skeleton, and is discoverable in every class, order, and even genus of animals, except a very few of the soft worms and insects in their first and unfinished state."

Respecting a question that has given rise to much investigation, particularly since the publication of Darwin's Zoonomia, we find Dr. Good detailing the most recent experiments. We refer to the rapid transmission or apparent transmission (for we must speak guardedly) of fluids from the stomach to the kidneys. It has been suggested by some, that the sympathy or consent of parts, or they know not what, exercises a distant influence, so as to generate or develope, rather than transmit such fluids, &c., as are introduced into the stomach. The smell of onions communicated to the breath through the lungs, is given as an example; and a similar smell of onions, sometimes produced in the breath of hard drinkers. Others think there is an actual channel of communication more direct than through the blood, Dr. Good in reference to this, says:—

"To determine whether such a channel actually existed or not, Dr. Wollaston introduced into the stomach three grains and a half of the salt, called prusssiate of potash; the presence of which, in almost all

kinds of colourless fluids, is capable of detection to the utmost nicety, by mixing with them a small portion of solution of iron, the colourless compound being immediately marked with a blue tinge. The above quantity was given to a healthy person, about thirty-four years of age, and was repeated every hour to the third time. The natural secretion from the kidneys being tested every half hour, was found in two hours to be slightly dyed, and at the end of four hours to afford a deep blue. At this period, just one hour after taking the last dose, and when the blood-vessels might be supposed to be fully impregnated with the material, if it passed to the kidneys through this conveyance, blood was taken from the arm, and allowed to coagulate, so that the serum or limpid part of it might be fully separated. The presence of the prussiate was then endeavoured to be discovered, by means of the solution of iron, but without the least effect, for the serum still remained colourless. And in other experiments of a similar kind, made both by Dr. Wollaston and Dr. Marcet, it was satisfactorily ascertained that the prussiate of potash, though it found its way readily to the kidneys, did not exhibit any trace of its existence in the fluid of any other organ whatever, any more than that of the blood; as the saliva, the mucus of the nostrils, or the limpid discharge produced by blisters. Mr. Home has since shown, that rhubarb, introduced into the stomach in like manner, finds a path to the kidneys, apparently without passing through the circulating system.

"Mr. Home, at one time, suspected that the organ of the spleen afforded a passage from the stomach to the circulation of the blood in the cases before us, instead of the lacteal vessels, which immediately arise from the alimentary canal. This idea he has, however, since relinquished as erroneous; but had even such a passage existed, it would only have conducted materials by another path to the blood; and the experiments of Dr. Wollaston have sufficiently proved, that the unknown channel, wherever it lies, has no connexion whatever with any part of the system of blood-vessels, or even with the common system of absorbent vessels; and so far as he seems to have disproved a previous theory of Mr. Charles Darwin upon this subject, which held, that the absorbent system might become the channel, by assuming a retrograde action. Such action, however, has never been established, and, independently of the experiments before us, it is rendered highly inconceivable, by the known structure of the absorbent vessels themselves.

"The corollary, then, resulting from these observations is, that in the animal system, as well as in inorganic nature, bodies in various instances act where they are not, and through channels of influence or communication, with which we are altogether unacquainted."

These specimens, which have been selected almost at random from the first and second volumes, will show the medical reader that the Book of Nature is much more adapted to the professional than the general reader. We shall only make one other extract from the third volume, namely his article on the Bilious Temperament.

"The second temperament or general character I have noticed, is the choleric or bilious. The liver and biliary organs, in general, are here as redundant in their power as the sanguineous vessels, and for the most part at the expense of the excernent, or cellular and lymphatic system. The pulse, as in the last kind, is strong and hard, but somewhat more frequent; the veins cutaneous and projecting; the sensibility acute and easily excited, with a capacity of dwelling for a long time on the same object. The skin is brownish, with a tendency to yellowness; the hair black or dark-brown; the body moderately fleshy; the muscles firm and well marked; the figure expressive. The temper of the mind exhibits abruptness, impetuosity, and violence of passion: hardihood in the conception of a project, steadiness and inflexibility in pursuing it, and indefatigable perseverance in its execution. It is to this temperament we are to refer the men who, at different periods, have seized the government of the world. Hurried forward by courage, audacity, and activity, they have all signalised themselves by great virtues or by great crimes, and have been the terror or the admiration of the universe. Such were Alexander, Julius Cæsar, Brutus, Attila, Mahomet, and Charlemagne, in earlier periods; and such in later times Richard III., Tamerlane, Cromwell, Nadir Shah, Charles XII. of Sweden, and the tyrant of our own day, Napoleon Buonaparte.

"This temperament, like the last, with which it is so closely connected, is characterised by a premature appearance of the moral faculties. The men I have just named, when merely emerging from youth, are well known to have conceived and executed enterprises that would have been worthy of their maturest judgment. Where the lineaments of this character are peculiarly strong, and the susceptibility, as frequently occurs, is very acute, the individuals are highly irascible, and launch into a passion from very trivial causes. Homer has ascribed this part of the general temperament to many of his heroes, particularly to Achilles; and every politician knows that it was a prominent feature in the constitution of Buonaparte, who seems, indeed, in the occasional insults he offered to many of the highest characters at his own court, and in the general presence of his court, to have copied from the Grecian chieftain, who thus addressed Agamemnon, the head of the Grecian princes, the ἄναξ ἀνδρῶν, presiding at a general council, in reply to Agamemnon's reprimand:—

> O monster! mix'd of insolence and fear,
> Thou dog in forehead, but in heart a deer!
> When wert thou known in ambush'd fights to dare,
> Or nobly face the horrid front of war?
> 'Tis ours the chance of fighting fields to try;
> Thine to look on, and bid the valiant die.
> So much 'tis easier through the camp to go,
> And rob a subject, than despoil a foe.
> Scourge of thy people, violent and base!
> Sent, in Jove's anger, on a slavish race;
> Who, lost to sense of generous freedom past,
> Are tamed to wrongs, or this had been thy last.

"In this temperament we discover, as I have already observed, an union of an active exuberant bilious, with an active exuberant sanguineous system. The temperament called bilious is, therefore, properly speaking, a complex genus, deriving its features from both systems, and from both in a state of energetic operation."

The Book of Nature, besides these strictly physiological subjects, contains some interesting dissertations on the general laws of Nature, on Geology, Analogy of Animal and Vegetable Life, Zoological Systems, Instinct, Language, Metaphysics, Physiognomy, Phrenology, &c.; on all of which the author has shown extensive reading, and a thorough acquaintance with the works, on the several subjects, both British and Foreign. The work, however, is as far from being a compilation, as any work embracing so wide a range of inquiry could be; for in every page, we trace a connexion of principles, harmonizing with the general train of the reasoning, and withal, a uniformity in the stile, which are altogether incompatible with mechanical compilation. We know of no work indeed, which is better suited to the literary practitioner, who is not merely satisfied with the routine of practice, but endeavours to cultivate his mind, and keep pace with the advance of science; and to the general reader, who wishes to acquire a knowledge of the connexion of Physiology with general Philosophy and Literature. When we say it is worthy of the author, and that it forms an excellent companion to his "Study of Medicine," we have expressed an opinion which we are certain its circulation will amply verify.

QUARTERLY HISTORY

OF

IMPROVEMENTS AND DISCOVERIES,

BOTH AT HOME AND ABROAD,

IN

Anatomy,	Surgery,	Materia Medica,
Physiology,	Practice of Physic,	Pharmacy,
Pathology,	Midwifery,	Chemistry,
Morbid Dissections,	Forensic Medicine,	Botany, &c.

Forming a useful Library of Practical reference.

I. ANATOMY.

M. Bock's *Anatomy of the Brain*, &c.*—This is an excellent anatomical work, similar to those of Cloquet and Lizars, and distinguished for its accuracy and minuteness. There are fifteen quarto plates, engraved on copper, accompanied by an octavo volume of letter press description and references. The subjects of this fasciculus, which makes a portion of the General Encyclopædia of Anatomy, are the brain, the spinal marrow, the organs of the senses, and the usual divisions of the surface of the body. The relation of the latter with the deep-seated parts is usefully pointed out, and is well deserving of the student's attention. The author has not, like Lizars, made all his designs original, but has borrowed, when it suited his purpose, from Reil, Meyer, Sömmering, and others; at the same time, the designs from his own preparations and dissections are peculiarly valuable, as every thing must be from the accurate author of the splendid work on the fifth pair of nerves. Among the descriptions which are perspicuous and simple, we meet with many recent discoveries—such as the connexion between the sympathetic, vidian, and the glosso-pharyngeal nerve in the tympanum, discovered by Jacobson, of Copenhagen, and confirmed by Lobstein in his splendid work on the Sympathetic, formerly reviewed in this Journal. The plates are all faithfully and accurately executed, and contain upwards of a hundred figures.

Tuson's *Myology*†.—Mr. Tuson is house surgeon to the

* Darstellung des Gehirnes, &c. Von Dr. A. C. Bock; pp. 419, 8vo. (with 4to. plates). Leipzig, 1824.

† Myology; illustrated by plates. In four parts. Part first, Muscles of the thigh, leg, and foot. By E. W. Tuson. London, 1826.

Middlesex Hospital, to the Governors of which he has dedicated his work. It is a very creditable production, exhibiting a very accurate coloured view of the parts; and by means of slips of coloured engravings, pasted at one end and loose at the other, each layer of muscle can be raised up as in dissection, and under it appears the next layer of muscle, also coloured after nature. A more ingenious performance we have never met with. We strongly recommend it as a companion in the dissecting-room.

Rowland's *Plate of the Eye**.—This is a very useful and splendid anatomical plate, and is very superior indeed to the common enlarged engraving of the eye. The accuracy of this one is guaranteed by the sources from which it is taken, and it will greatly assist the student in forming an accurate notion of the complicated relations of the coats, humours, vessels, and nerves of the eye, which are always rather puzzling to beginners.

Lizars' *Anatomical Plates.*—This work proceeds rather slowly, so far as the publication is concerned, but with no deviation of zeal on the part of the author. Should the present difficulties which are in this country thrown in the way of anatomical study continue, works like this will rise in value and importance, though at the expence of sound practical knowledge; for their proper use is as a guide to the dissecting-room, not as a substitute for the actual use of the scalpel.

Dr. N. R. Smith's *Classification of Anatomy*†.—Though we think that much valuable time has been spent on classifications, yet it is always important to have a clear, accurate, and simple arrangement of a science or a subject for the purpose of teaching, of study, or of improvement. Dr. Smith, it will be seen, has made an ingenious attempt at this. We shall leave our readers to decide on its utility.

"GENERAL ANATOMY.

ANATOMY.		PHYSIOLOGY.	
ELEMENTARY TEXTURES.		ELEMENTARY PROPERTIES.	
Chemically Constituted, and Organized.	Cellular Texture Osseous Cartilaginous Fibrous Muscular Nervous Serous Mucous Epidermoid	Tenacity, Hardness, Elasticity, Flexibility Smoothness, Extensibility and Contract. of Tex. Sensibility and Contract. of Life.	*Physical and Vital.*

* A Plate of the Eye, engraved by Stewart, from a drawing by A. G. Rowland, after Zinn and Sömmering, and used by Mr. Mayo in his lecture-room.

† American Medical Review, Sept. 1 25.

ELEMENTARY. *General Organs.*		ELEMENTARY. *General Functions.*	
Resulting from union of Texture.	Blood-vessels. Exhalants, Nutrients, Absorbents, Nerves,	Circulation, Exhalation, Nutrition, Absorption, Sensation.	*Resulting from union of Properties.*
COMPOUND. *Independent Organs.*		**COMPOUND.** *Independent Functions.*	
Resulting from union of textures and elementary organs.	Brain, Eye, Ear, Palate, Schneiderian Membrane, Skin.	Moral & Intellect. Phenom. ?—— Vision, Hearing, Tasting, Smelling, Protection, &c.	*Resulting from union of elementary functions & properties.*
APPARATUS. *Of Associated Organs.*		ASSOCIATIONS. *Of Functions.*	
Resulting from associations of distinct organs and textures.	Digestive Apparat. Respiratory —— Secernent —— Locomotive —— Sexual, ——	Digestion, Respiration, Secretion, Locomotion, Generation.	*Resulting from union of functions and properties.*

" It will be seen, that, in the foregoing table, I have endeavoured to embrace the excellencies of Bichât's classification, whilst I reject so many of its principles, deemed erroneous, as to give it almost entirely a new aspect. It has been my object to carry through the whole science the anatomical and physiological climax of composition, which is suggested by his elementary textures and elementary properties.

" With regard to the distinction of elementary textures, I would observe that Bichât's system has been criticised by many who have not appeared to understand the principle upon which it was founded. It was not his object to resolve every part of body into the ultimate constituent principles, to which they may perhaps be reduced by maceration and other mechanical means; but to designate those as elementary, in relation to the organs, which are, in their *natural state*, characterised by peculiar physical and vital properties, and which are uniform in their appearances and offices in every part of the system.—Thus, the serous membranes may be resolved into cellular tissue, but they are strongly characterised by peculiar properties, which are conferred upon this particular condition of that tissue, and are to be regarded as distinct. The same may be said of the bones. They have erred, therefore, who have endeavoured to reduce the simple textures of Bichât to the number of three or four. There are some, however, which may with propriety be rejected as mere *varieties* of other textures, as for instance the medullary, the pilous, &c. Certain compound

textures as the fibro-cartilaginous, in which the properties of the constituents are not changed, but merely modified, need not be treated of distinctly.

" It will be seen, that in my arrangement the blood-vessels, absorbents, nerves, &c. with their functions, constitute a class by themselves. The name which is conferred upon them expresess the reason for this disposition. They are compound, and they are general, all of them entering into the composition of most organs, and some of them supposed to be essential to all. The functions which they perform are general, and, for the most part, common to all the compound organs. Although I would, in the first class, treat of the nervous *texture*, yet the *nerves* are to be regarded as elementary organs, bearing a relation to the system, corresponding to that of the blood-vessels, &c. They are also compound and divisible into nervous and cellular textures.

" The next class consists of compound independent organs, and their corresponding functions. It cannot be supposed that I would mean absolutely independent, but merely that each one of these organs completes its function singly, without the aid of subsidiary organs. Of course they are connected with the system, through the medium of the elementary general organs, of which, and of simple textures, they are compounded. The phrase which I use to designate this class, will be better understood when regarded in contradistinction to that by which I denominate the fourth and last class. In this it is obvious that several distinct organs contribute their several functions to one common function. I, therefore, denominate the association of these organs an apparatus, and the result of their united offices an association of functions.

" It appears to me that the facility and the interest with which anatomy and physiology might be studied, are much diminished by the unnatural separation of these two parts of the science, which at present prevails. The structure of an organ is only interesting in relation to its function, and its function is only intelligible by reference to its structure. The plan which I have pursued, it will be seen, recognises this principle."

II. PHYSIOLOGY.

M. Rudolphi's *Elements of Physiology*.—This is another volume added to the already ample list of elementary treatises on physiology. The author is well and favourably known by his work on worms, and the present publication will, we have no doubt, add to his fame. It is well arranged, and contains a very great number of important facts, condensed into a reasonable compass. What we dislike most about it, is the parade of new terms, which are useless to the scholar, and

puzzling to the student—such as *anthropotomy*, for human anatomy.

The division of the work is into general physiology, including anthropology, anthropotomy, anthropo-chemistry, and zoonomy; and particular physiology, including sensation, motion, nutrition, and generation. The translation, by Dr. W. D. Howe, of the first volume, is, to say the least, not masterly, and in some places adds inaccuracy to inelegancy; but we can scarcely go so far as a contemporary reviewer in condemning it; and think that, with all its faults, it will be found extremely useful, both as a book of reference and of study. We shall probably give a more extended account of it in a future Number.

M. Beullac's *Manual of Physiology**:—This is the smallest compend of physiology we believe hitherto published; but though it is brief in detail, it appears to be in general correct, and may be useful to those who have not leisure to study more extended treatises. The arrangement is similar to that of Magendie, following the order of The Functions of Nutrition, Digestion, Absorption, *digestive*, *lymphatic*, and *venous*, Circulation, Respiration, Secretion, Calorification; The Functions of Relation, Sensations, *sight*, *hearing*, *smell*, *taste*, and touch, Locomotion, Voice and Speech; The Functions for Preserving the Species, Generation, Gestation, Accouchement, and Lactation; The Epochs of Life. The style is very succinct and comprehensive, and forms a very striking contrast with the usual verbosity of French writers. For example:—

"The *Spleen*, of a violet red colour, more or less deep, is placed deep in the left hypochondrium, under the diaphragm, and above the colon, between the large curvature of the stomach, and the cartilages of the false ribs, superior and anterior to the left kidney. The usual length is three inches and a half, and its thickness two and a half, and its weight eight ounces. Its parenchyma deprived of blood, contains a number of grayish granulations, soft and semi-transparent. It is enveloped in a serous membrane, furnished by the peritoneum, and in a peculiar tunic of a fibrous texture which adheres to it intimately, and gives off to its interior, fine, solid, and very elastic prolongations. Smooth upon all the rest of its surface, the spleen presents only on its internal side, a passage by which the vessels and nerves penetrate into its texture."

Such is a fair specimen of the descriptive style of M. Beullac, which he professes to have founded on a saying of Condillac, that forms his motto.—"Une chose dite une seule fois, et où elle doit l'être, est plus claire que répétée ailleurs plusieurs fois."—A thing said once, and in its proper place, is more clear than when often repeated elsewhere. There are 36 pages

* Manuel de Physiologie. Par J. P. Beullac. 18mo. Paris, 1826.

of what the author calls "Discours Preliminàire," the utility of which in such a work we cannot perceive.

M. Collard *on Cutaneous Absorption.*—At the sitting of the Royal Academy of Medicine of Jan. 3, MM. Ségalas, Roux, and Adelon, reported on a Memoir by M. Collard, containing five experiments in proof of the existence of cutaneous absorption. Among them are the following: having kept his hands for an hour in a vessel of water, he found on withdrawing them that it had lost more than another vessel placed as nearly as possible in similar circumstances. Having placed his hand over the mouth of a funnel filled with water, and closed at the other end, he remarked that the skin of his hand became cupped and prominent, as though a vacuum had been formed. He repeated this experiment with the same effect in a graduated vessel, containing a quantity of air sufficient to shew the least depression in the level of the water—he procured a glass tube curved as a syphon, with the shortest branch expanding into a funnel shape; after pouring mercury into the segment joining the two legs of the syphon, he filled the funnel-shaped one with water, and kept the palm of his hand in contact with the surface for two hours, having previously augmented the pressure of the water by pouring an additional quantity of mercury into the longer leg. The result of the experiment was, that the mercury rose towards the palm of the hand, proving that a certain quantity of water had been absorbed.

Phrenology.—The old and true proverb that doctors differ, was never more strongly exemplified than in the instance of phrenology, of which we shall give instances, without attempting to decide between the opponents:—

Dr. James Johnson, in his Biographical Record of Coombe's System of Phrenology, says, "Independently of its importance as a system of phrenology, this volume presents very high claims to attention, in being, as we humbly conceive, one of the finest examples of philosophical reasoning and instruction that has ever been submitted to the judgment of mankind. Throughout it is modest, concise, and perspicuous: on all questions it exhibits premises fairly stated, and inductions legitimately drawn: it abounds with good feeling and taste, manifests an ardent, but temperate, zeal for truth; and has a rich glow of philanthropy which charms, without fascinating, the mind. Hence we conclude, that its influences on science and morals will prove as extensive as they must be decidedly beneficial."

Per Contra.

Dr. Milligan, in his Notes to Magendie's Physiology, has characterised the science and its disciples, particularly including Mr. Coombe, as every thing that is base and despicable, and talks of their "viru-

lence," and "characteristic bad faith," and "imposture," as of a piece with their "slang," "gibberish," and "sheer absurdity."—"Let not the reader," he says, "think me tedious with the paralogisms of those now whining, now obstreperous, sophists: their floundering is to me, and every enemy of absurdity and imposture, a source of congratulation and triumph."—"Have they explained why men of science ridicule their absurdity, detest their coarseness, hypocrisy, and imposture?"—"But their total ignorance of good letters, their want of faith or common veracity, their weak attempts at disguising, parrying, and misrepresenting what they found unanswerable, have established feelings of the profoundest contempt."—"Having sufficient evidence of the 'high estate' of my more immediate aggressor," (Mr. Coombe, we suppose,) "in the orthography, breeding, modesty, and veracity of his production, I sit down consoled with the idea, that my readers will readily perceive that their grandiloquous tones are but part and parcel of the general economy of their system of imposture; and that there is not more philosophy in their hypothesis, religion in their cant, or honesty in their *manifestations*, than there is truth in their assumed superiority over myself."

Mr. Charles Bell says, "The most extravagant departure from all legitimate modes of reasoning, though still under the colour of anatomical investigation, is the system of Dr. Gall. It is sufficient to say, that, without comprehending the grand divisions of the nervous system, without a notion of the distinct properties of the individual nerves, or without having made any distinction of the columns of the spinal marrow, without even having ascertained the difference of cerebrum and cerebellum, Dr. Gall proceeded to describe the brain as composed of many particular and independent organs, and to assign to each the residence of some special faculty."

Dr. Good says, "The whole, in truth, is founded on hypothesis: here it begins, and here it ends; hypothesis, too, unsettled and disputed, in many of its points, among themselves. And, yet planting their feet upon this tottering and unsteady ground, they are perpetually uttering the proud and lofty words, *science*, *proof*, and *demonstration*—than which a more palpable or grosser abuse of terms can never be employed or conceived."—(*Book of Nature.*)

Dr. Barclay, the eminent anatomist and metaphysician, says, "on opening the skull, and examining the brain towards the surface, where these organs are said to be situated, it seems to require no small share of creative fancy to see any thing more than a number of almost similar convolutions, all composed of cineritious and medullary substances, very nearly in the same proportions, and all exhibiting as little difference in their form and structure as the convolutions of the intestines."

M. Flourens *on Hearing*.—This indefatigable experimenter has lately turned his attention to the investigation of the senses by experiments chiefly on fowls.

"He has succeeded in extracting or destroying, with much less collateral injury than could have been anticipated, the different parts of the

organ of hearing, in pigeons. After removing the skin, muscles, ligaments, and a few small bony pieces, the membrana tympani comes fully into view, and can be easily destroyed. The first three bones can be separated afterwards, as well as the membranes covering the foramina rotundum and ovale. By leaving the larger and posterior portion of the membrana tympani, the stapes can be dislocated from the foramen ovale, and turned in another direction. The semi-circular canals and the imperfect cochlea lie posterior to the tympanum; and access to them may be had from the external surface of the cranium, by cutting through a structure of cellular bone. Finally, a small imperfection exists in the bony envelope of the vestibule, in the direction of this cellular portion of the bone; and M. Flourens succeeded in introducing a needle by this route, so as to destroy the sacs contained within the vestibule, without injuring its parietes.

"Neither the destruction of the tympanum, nor that of the three first bones, materially injured the hearing. By the removal of the stapes it was much enfeebled. The destruction of the membranes covering the foramina rotundum and ovale, enfeebled it still more. The restoration of the stapes, while still in connexion with the larger half of the membrana tympani, restored a portion of the power of hearing. The division of the semi-circular canals apparently rendered the hearing confused and painful; and produced the singular effect of a violent and rapid agitation of the head from side to side. The removal of the immediate covering of the vestibule did not materially affect the hearing. The injury done to the contents of the vestibule, on the other hand, affected the hearing in a degree precisely proportioned to its extent; and the destruction of the whole of its contents completely put an end to the function of hearing. Wounds of the vestibule were not materially painful; while those of the semi-circular canals were acutely so, and produced the singular agitation above alluded to.

"The destruction or removal of any of the parts internal to the first three bones, though not immediately followed by the destruction of hearing, were uniformly productive of that effect, after a longer or shorter period of time. Of these parts, the stapes was that which the power of hearing survived the longest. These experiments were tried on both sides at once; and the bird was blind-folded, and a screen placed between her and the means by which sounds was produced; with other precautions to prevent the animal perceiving any cause of disturbance by means of her other senses."

III. PATHOLOGY.

M. Segalas' *Experiments on Poisoning*.—M. Ségalas has communicated some experiments, tending to prove that absorption is the medium through which poisons produce their effects. Having divided the spinal marrow, so as to render the animal

paraplegic, and having inserted extract of nux vomica into the paralysed parts, he found that tetanus ensued as quickly and decidedly as when the nervous system remained uninjured.—On the contrary, having left the spinal cord untouched, but having interrupted the return of blood to the heart from the part in which the poison was inserted, he found that the symptoms of poisoning did not take place. Third, when the poison was injected into the bronchiæ, tetanus ensued with equal rapidity, whether the nerves of the eighth pair were or were not divided. Fourthly, the extract when placed in the thigh of an animal rendered paraplegic by the section of the spinal marrow, produced tetanus, not only in the trunk and upper extremities, but also in the paralytic extremities. Fifthly, the same effect was produced, in whatever part the poison was placed, whether the abdomen, the thorax, the cellular tissue of the back, the veins, or the bronchiæ; so that the paralysed parts seem equally exposed to the effects of the poison with those that retain their connexion with the nervous centres; with this exception however, that their contraction is less rapidly produced, apparently only in proportion as the blood conveys the poison to the nerves animating them. Sixthly, having injected the poisons into the crural artery of an animal paralysed in the same manner, the same effects followed, the convulsions first commencing in the thigh, and not becoming general until after the time that might be supposed sufficient for the conveyance of the poison through the medium of the circulation to the spinal marrow. Among other inferences, M. Ségalas concludes, that in certain circumstances the voluntary muscles may contract, independent of the action of the cerebro-spinal system; and that there are some diseases dependent on the state of the blood. *(Revue Medicale, Mars. 1826.)*

M. Puchelt *on Inflammation of the Veins* *.—It is not easy to draw a well defined line of distinction between congestion and inflammation. The author contends that the only difference between inflammation and congestion is, that in the former *all* the capillary vessels of a part are dilated and engorged; whereas, in the latter, this condition occurs only partially; the majority of these vessels remaining in their natural state. In the former state, that is when all the capillaries are affected in this manner, the functions of reproductive and recrementitious secretion are suspended. In consequence of this state of things, the sensibility and irritability of the affected parts become morbidly increased, and give rise to the different phenomena characteristic

* Das Venensystem in seinen Krankhaften Verhaeltnissen, dargestellt von. Dr. F.A. B. Puchelt, Ausserordentlichem, Professor der Medicine an der der Universitæt Leipzig, &c. &c. Leipzig, 1818, 8vo. pp. 405.

of inflammation. According to this opinion then, congestion, or a general engorgement of the vessels, is always the first link in the chain of morbid circumstances, that lead on to inflammation. The true difference between inflammation and congestion appears to us to be, that in the former there is connected with vascular engorgement, a morbid state of the vital properties of the capillaries; whereas in the latter, the sensibility and irritability of the congested vessels remain in their natural state, and perform their natural functions, though perhaps in a less active manner.

That change of the capillary vessels which constitute inflammation, or that congestion of these vessels which precedes, and is an essential circumstance of inflammation, may, according to the author, proceed either from the side of the arterial or venous branches—that is, the congestion and consequent alteration of the vital properties may exist, either in the venous or arterial capillaries. There are, therefore, two kinds of inflammation, the *venous* and *arterial.* The characteristic circumstances of the former variety of inflammation are, according to the author, the following:—1. Venous inflammation appears most commonly in those parts, in which the venous system predominates over the arterial. This is particularly the case with the liver, in the spleen, and even in the lungs. This variety of inflammation is also apt to occur in the mucous and serous membranes. The author thinks that the inflammation of the brain in hydrocephalus is of the venous kind.—2. Venous inflammation arises from the influence of causes, that have a tendency to favour the increase of the quantity and peculiar character of the venous blood. This kind of inflammation is also more particularly observed to occur in individuals, in whom other symptoms of an increased "venosity" manifest themselves, such as hæmorrhoidal affections, &c.—3. The progress of venous is, in general, more slow than that of arterial inflammation.—4. In relation to the individual symptoms it may be observed, that the pain of venous inflammation is often very trifling, and in some cases entirely absent. This is not only the case in inflammation of the venous trunks themselves, but also in venous inflammation of other organs; as in pneumonia, the pain is not acute and piercing, but dull and heavy; the colour of the affected part is darker, and the swelling much greater than in arterial inflammation; generally, the function of the organ affected with venous inflammation is exceedingly deranged. In venous pneumonia, for instance, in which scarcely any pain is experienced, the respiration is generally extremely laborious and anxious. In inflammation of the veins the pulse is almost always frequent, small, somewhat tense, often irregular. In venous inflammation of other organs, the pulse is less frequent, but always small and rather tense. The author gives an account of seven cases, of what he considers inflammation of the *vena cava.* From these we shall select the following case:—

"Mrs. P—, aged fifty-seven, of choleric temperament, and of an atrabilious appearance was, in the Summer of 1816, suddenly seized with complete syncope, from which, however, she soon recovered, and

remained in apparent good health until February, 1817, when she contracted a cough, which was regarded as catarrhal. Expectorant remedies were prescribed; but the cough grew worse from day to day; acquired a spasmodic character, and was particularly aggravated by ascending stairs, even of a few steps. She experienced no particular pain or uneasiness except what was created by the cough. On the morning of the 7th of March, she was suddenly seized with a chill throughout the whole body, which was followed by a considerable fever, accompanied with pain in the right side of the thorax. In the afternoon Dr. P. found her skin moist and warm, the pulse frequent, irritated, and somewhat hard; respiration was hurried but not oppressed, or attended with feelings of anxiety and distress. The disease was now viewed as a case of pleurisy, and remedies were directed conformably to this diagnosis. On the eighth day, the pain in the side had entirely disappeared; but the pulse, as well as the respiration, remained extremely frequent; the cough was not attended with any expectoration. She was now bled to the extent of *six ounces;* the blood was covered with a thick layer of size. The extreme frequency of the pulse and respiration as well as the dry cough, continued without any perceptible change until the tenth. A laxative deobstruent mixture was now administered, and on the eleventh, as she passed a very copious stool of black matter, she suddenly sunk into an alarming state of syncopy, from which she recovered slowly. When Dr. P. came to her, she had recovered her consciousness; but he found her much prostrated, with a very small and frequent pulse, and a pale and shrunken appearance of the countenance. Epispastics were applied to the legs, and liquor ammonia was administered in small doses. The unfavourable character of the pulse and respiration, just mentioned, continued without alteration; she became restless, without, however, suffering the least pain or anxiety of feeling. This state of things gradually assumed a more alarming character until the twelfth, when she died suddenly, having been perfectly sensible to within a few minutes of death. On autopsic examination, the following appearances were noticed: The body was well nourished; the muscles were of an unusually dark colour; the abdomen was tumid, the chest contracted. On opening the thorax the lungs were forcibly protruded; the right lung adhered to the pleura; the appearance of this viscus was natural; a red, frothy fluid was copiously discharged from incisions made into its substance; the heart was sound, but appeared unusually flacid. But the *vena cava inferior* was dilated to two inches in diameter, as far down as the diaphragm; its sides were very white and as thick as those of the aorta. In this dilated portion, there was a polypus of the size of a "large nut," whose pedicle extended up to the right auricle; the liver was of considerable size, but appeared sound, nor was there any morbid appearance discoverable in the intestinal tube."

It may be doubted, however, whether this case can be properly given as an example of inflammation of the vena cava. FRANK and KREYSIG mention an uncommonly frequent pulse and hurried respiration,

as symptoms of venous inflammation, but these phenomena are so frequently observed in other affections, that no reliance can be placed on them, as diagnostic signs in the present case. It must nevertheless be confessed that the thickened sides of the dilated portion of the vein, and the polypus, give some probability to the idea, that there existed inflammation in the affected part.

Dr. James Johnson *on Angina Pectoris* *.—The following is a very instructive case of angina pectoris, or whatever else it may be denominated:—

"A recent example of angina pectoris, in one of its most terrible forms, lately occurred at Hampstead, and was seen by Dr. Latham, Dr. Maton, Dr. Bree, Mr. Rodd, of Hampstead, and some other medical gentlemen, as well as Dr. Johnson, under whose care the patient was during the last 18 months of his life. Mr. Wright was about 58 years of age, and with the exception of a nephritic complaint, had enjoyed general good health. About 18 months ago, while walking up to Hampstead, he felt an indescribable sense of stricture and pain across the chest, which caused him to stop for several minutes, when he recovered. These accessions became gradually more severe in degree, and returned at shorter intervals. They, also, soon became accompanied by pain darting sometimes from the region of the heart down along the left arm to the wrist, or even to the fingers. Dr. Johnson had the patient under his care from this time till death took place. The chest, examined carefully by percussion and by the stethoscope, appeared to contain no organic lesion. The heart beat regularly, though somewhat weakly, over the ordinary space. The disease was readily recognized to be angina pectoris, probably depending on a flabby and debilitated state of the muscular structure of the heart; which opinion was delivered to the other medical gentlemen who visited the patient in succession. For the last six months the paroxysms became dreadful in violence, duration, and frequency. They generally came on in the evening, and lasted, with more or less force, till five or six o'clock in the morning, during which time, the unfortunate patient was obliged to keep in the perpendicular posture, crying out with the pain in his arm and chest, and employing one or two people constantly rubbing his arm, breast, and back, in order to mitigate the pain. Opium, brandy, ammonia, æther, and the strongest antispasmodics and stimulants gave only very temporary, or oftener no relief. The longest interruption of the spasms (nearly a month) took place after the application of a large tartar-emetic plaster to the chest, which produced an extensive ulceration that required three weeks to heal. In this period he went to Ramsgate, where the spasms returned, and he came back to Hampstead worse than ever. It may be worthy of remark that, in this case, the pain occasionally arose in the arm, and darted thence into the chest, occasioning the most indescribable suffering there. At other times, the pain commenced about the heart, and flew to the arm, where friction, even

* Medico-Chirurg. Review.

with the handles of brushes or rough pieces of wood, was necessary for hours together! The urine now became scanty—the legs swelled—the patient was worn out with nights of agony and days of stupor and languor—and, in one of the paroxysms, death happily came, as a friend that had long been invoked by one of the greatest sufferers which the writer of this article ever saw.

"On dissection, the lungs were observed to be perfectly sound. No water of any consequence, either in the bags of the pleura or the cavity of the pericardium. The heart was of the usual size, but much covered with fat. Its muscular structure was pale, flabby, and so lacerable as to be easily mashed between the fingers, like wetted paper or putrid meat. There was no disease of the valves, nor of any of the large vessels issuing from the heart. The left coronary artery was taking on an indurated or cartilaginous condition. The parietes of the ventricles were rather extenuated, as well as softened in structure. Mr. Rodd and two other medical gentlemen assisted Dr. Johnson in examining the body. There was no other disease, except an obliteration of the pelvis of the left kidney."

M. Flourens *on Cerebral Cicatrices.*—We have not lately met with any thing more interesting in Pathology than the following:—

"In the course of M. Flourens' experiments, he had frequent occasion to witness the healing of wounds inflicted on various parts of the brain. He subsequently repeated some of these operations, with the express view of observing the manner in which injuries are repaired. His conclusions, most of which appear fully warranted by the details with which he has furnished us, are as follows:—

"Wounds of the brain with loss of substance, are followed by a fine and smooth cicatrix of the mutilated surface.

"Wounds producing simple division, merely unite by the immediate re-union of the divided parts.

"When a ventricle is deprived of its superior parietes, the cavity is again completed, and the surface which covered it renewed, by the extension of its lateral parietes.

"When the destroyed substance is re-produced, the animal regains the functions of the part removed; unless the amount destroyed exceed certain limits. M. Flourens judges of this very difficult question by the fact that the animal recovers to a partial extent, from the stupor which had been originally produced by the injury. In one case, also, the animal recovered the use of an eye.

"New bone and new skin are formed; and, as our author says, new species of them. While cicatrizing, the wound is protected by a crust of some sort; either, as is most commonly the case, by a stratum of dried blood, or, if this be removed, by a portion of dried lymph, or by a piece of bone or skin. Great abundance of a transparent lymph is found beneath this protecting substance, and it escapes when an opening is made. The healing surface is covered with lardaceous granu-

lations, and thickly bestrown with red points and streaks. The experiments were made on ducks and fowls.

Mr. T. F. KING *on Disease from Ergot of Rye.*—The medical effects of ergot have lately been extensively tried. The following notice is important, considered in relation to this subject:—

" Mr. Theodore F. King, house surgeon of the New York Penitentiary, describes 32 cases of morbid affection from this cause, occurring in that prison, in the fall of last year. Small livid spots made their appearance on one or both of the lower extremities, generally about the foot, without any local pain or weakness, or any perceptible general indisposition. After a few days, they could become more numerous, and extend up to the knee. Pain now occurred—in one case very severe; and, in some instances, the patient lost the use of his lower extremities. The pulse was feeble, and seldom exceeded 100 in a minute. The face had a peculiar livid appearance. No unusual heat of the skin occurred. The tongue was slightly coated and " very flabby." In several cases, there were considerable sores about the mouth, and, in two or three hæmorrhage from the gums; bowels generally regular;" urine natural; death always preceded by " severe colicky pains;" usual duration of the disease about four weeks. Ten cases proved fatal. No mention is made of uterine pains occurring among sixteen females.

" The only dissection made exhibited the intestines studded with dark, livid spots, in the greatest abundance, upon the large intestines, and the stomach inflamed, with a discoloration upon the under and larger portion. The uterus was natural.

" Has any one ascertained whether our ergot be or be not a different species from that of Europe? We have here, among thirty-two patients, not a single case of gangrene recorded."

Animal Magnetism *.—This science, whether real or spurious, has formed the subject of very warm discussion during three meetings of the Royal Academy of Medicine, at Paris, to determine whether or not it formed a proper subject for their examination. It was decided by a majority of thirty-five to twenty-five, that a commission should be named for the purpose of examining the question.

Mr. FAWDINGTON'S *Case of Melanosis.*—As this seems to be a case of some value, and well drawn up, we have not space left to do it justice, and shall reserve it for our next.

IV. MORBID DISSECTIONS.

M. SERRES' *Case of Rupture of an Aneurism of the Basilar Artery.*—G. B. Espert, aged 59, a copper-founder, of robust

* Revue Medicale, Mars. 1826. † Archives de Medicine.

constitution, short-necked and very muscular, had been long subject to an indefinable weight and heaviness of the head, increased by any exertion, quick walking, or drinking. He entered the hospital de la Pitié, in consequence of pneumonia, on the 6th February; which readily yielded to bleeding, leeches, &c.—On the 26th, he was convalescent and about to leave the hospital, when he heard of the death of a child to whom he was much attached. This news disturbed him much, and produced syncope lasting for some hours. On the following day, his face was flushed; the jugular veins swelled; respiration laborious and causing pain in the right side, the seat of the former disease. The pulse was hard, strong, full, and frequent. There was constant vertigo when the patient stood or sat up.—He was relieved by a copious bleeding.—In the evening he was somnolent: 28th, continued apoplexy; respiration slow; pulse frequent, strong, and very hard; face red and swelled: he died suddenly at one in the afternoon, the symptoms still undiminished.

The body was opened twenty-seven hours after death.—The cranium was no sooner opened, than an enormous quantity of black blood, coagulated in a laminated manner, was perceived at the base of the brain. On turning up the brain, the basilar artery was found aneurismal below the tuber annulare, near the junction of the branches forming it. The dilatation was an inch in diameter in every direction, and the size of the cavity about equal to a small pullet's egg. Its shape was rounded, but a little flattened upon its upper surface. At the part corresponding to the base of the brain it was entirely empty, and presented on the outer side a circular opening with irregular edges, and about a line and a half in diameter. Its parietes were thin but uniform. The middle coat presented the cartilaginous state often found in the arterial circle at the base of the brain. The blood that had escaped was estimated at about a pound; it had followed the layers of the membranes, by that means making its way into, and distending the ventricles. The brain and cerebellum were otherwise healthy.

M. Scoutetten's *Case of Hypertrophia of the Brain.*—A. P. a child of five years of age, presented a great enlargement of the head, which was equal in size to that of an adult. The enlargement had taken place very gradually. For a long time the child had complained of no pain, nor was there any thing particular in the intellectual functions. He was inclined to fall asleep when at rest. All the other functions of the body went on regularly, till the beginning of September, 1823, when he suddenly, and without manifest cause, lost his appetite became

thirsty, complained of pains in the epigastrium, and was more than usually drowsy. This state continued for 15 days, without any alteration. On the 16th day the symptoms became suddenly augmented, and the intellectual functions were entirely abolished. The pupils were dilated, but contracted on the application of a strong light. At midday the child died, without convulsion or struggle.

Dissection.—The skull was from a line to a line and a half in thickness, and this obtained in the places where the fontanelles are usually seen. The dura mater adhered strongly to the skull, but was not altered in structure. The pia mater was much injected with blood, and in some places thickened in its substance. The substance of the brain was very firm. The enlargement of this organ was principally in the posterior part of the hemispheres, and also the superior. It required an incision of three inches in depth to come at the ventricles. There was very little fluid in these cavities. All the other organs of the body were sound except the intestines, which presented some marks of inflammation.

Dr. James Johnson's *Case of Perforation of the Stomach*‡. —Mr. Barber, (of Henrietta-street, Covent-garden) a gentleman of middle age, had been affected with daily vomiting for nearly 29 years; and his father had been subject to the same complaint, of which he ultimately died. Mr. Barber, however, was rarely prevented from attending to his usual concerns, up to the day before his death. The vomiting generally came on some two or three hours after eating, and blood was frequently seen in the ejected matters. He occasionally complained of pain in the region of the stomach. He was not at all emaciated—but, on the contrary, was rather fleshy. On Tuesday, the 6th December, 1826, he ate a hearty dinner of beef-steaks, and drank some spirits and water afterwards. While in this last act, he was seized with sudden and violent pain in the region of the stomach which soon spread all over the abdomen, attended with constant restlessness, quick pulse, anxious countenance, and tendency to sickness. Mr. Best, surgeon of Tavistock-street, was called to the patient, and bled him, directing such other measures as he deemed proper. At one o'clock, *m p.* on Thursday, the 7th, Dr. Johnson was called in, and found the patient with the symptoms above described, the abdomen being very tense and distended, the pulse 120 and sharp—the tongue coated—the countenance indicative of the greatest distress. On examination, it was perceived that an old inguinal hernia, which had lately given no uneasiness, was moderately distended, and its contents easily reducible; but these contents immediately returned, as soon as pressure was taken off. Dr. Johnson, suspecting that

‡ Medico-Chirurg. Review.

there might be some strangulation about the inner ring, suggested the propriety of an operating surgeon being joined in the consultation, and Mr. Stanley attended at 4 o'clock. Meantime the abdomen was covered with leeches, and attempts were made to open the bowels, both by medicines and enemata. Mr. Stanley examined the hernia, but could not perceive that there was any proof of strangulation. The medical attendants met again at 10 o'clock, and it was evident that the patient was at the point of death. He had vomited upwards of three pints of a black fluid, resembling coffee grounds. The pulse was scarcely perceptible, and the countenance was ghastly. The hernial tumour was now larger than ever, and a crackling or gurgling noise was heard in it when pressed up towards the abdomen. Mr. Stanley now thought it advisable to proceed to an operation, in order to ascertain, more exactly, the state of the hernia, giving the friends but little hopes of success at the same time. After laying bare the sac, which was much distended, Mr. Stanley continued to divide layer after layer, with great caution, when suddenly, on making a small puncture, a rush of air, followed by a discharge of reddish fluid, took place. At each inspiration these fluids were discharged in considerable quantities, and with a gurgling noise, and these discharges continued without any abatement, so that it was evident a communication had been made with the abdomen, but whether with the internal surface of the bowels or with the peritoneal cavity, was not certain. Under these circumstances, and especially, as the patient was evidently dying, it was not deemed prudent to proceed farther with the operation. A ligature was passed round the puncture, the lips of the wound stitched, and adhesive straps applied. At half-past 11 Mr. Barber died.

Dissection.—The stomach was of a most enormous size, and its peritoneal coat, together with the whole peritoneal covering of the intestines greatly inflamed. A quantity of dark coloured fluid, nearly resembling that which the patient had vomited, was found diffused in the general cavity of the abdomen, in which there was also a good deal of air, which escaped on first opening the cavity. Near the pyloric orifice of the stomach, a small opening, the size of a silver penny, was discovered externally. The viscus was then cut out carefully, and examined. On its internal surface, and corresponding with the aperture discovered externally, there was an old ulcer, with hard, white, and raised edges. In its centre was the aperture above mentioned. No intestine or omentum was in the hernial sac, which was filled with the same kind of fluid as that contained in the general cavity of the abdomen.

The whole of the phenomena were now clearly accounted for. The ulcer in the stomach had existed for years, and gave origin to the vomitings and bloody discharges. On Tuesday the bottom of the ulcer gave way, and the contents of the stomach were discharged into the abdominal cavity—hence the pain, inflammation, and distention. Part of this extravasation (both fluid and aerial) had made its way into the hernial sac, and thus caused the puzzling phenomena above mentioned, in the operation.

V. SURGERY.

KENNEDY *on Cupping* *.—The object of this work is to introduce to the public what Mr. Kennedy conceives to be an improvement in the common cupping apparatus. The improvement (or *alteration* we would say) is in the mode of producing the vacuum in the glasses. Our readers are aware that this is commonly done by rarifying the air with a torch or spirit lamp introduced into the glass, and quickly withdrawn. Mr. Kennedy thinks that in this way "it is almost impossible, with the greatest dexterity, to prevent the patient from feeling the effects of the fire, and consequently suffering much." This we deny †, and in support of our opinion would appeal to any practical cupper. We feel ourselves bound to say, after many years practical acquaintance with the operation, that this assertion is unfounded. It is made most probably with a view of recommending Mr. Kennedy's improved apparatus.

"The new glasses which I present to the public are neither complicated in their structure nor difficult in their application, and by their extreme simplicity will render the operation so easy, that almost any tyro in the profession will be able to use them with dexterity; and in the absence of the surgeon, in urgent cases can apply them, and thus render himself useful to his master. The shape of the glass itself is but little altered; instead of the narrow rim of some of the older glasses, I have adopted a more rounded shape, to avoid, if possible, the ill consequences which attended the older ones when applied to inflamed or irritable parts, exciting considerable pain by their sharp pressure on the skin, and frequently cutting off the communication of the vessels external to the

* An Essay on Cupping. By Charles Kennedy, Surgeon, 12mo. p. 63. Jackson, London.

† The Editor may remark, that this notice of Mr. Kennedy's book is written by a correspondent, who has had much practice in cupping; but the Editor is positive from the best authority, that the patient is often scorched, even by the most experienced cuppers in London.

glass; and consequently preventing a flow of blood, particularly where there is little cellular substance or muscle; as over bony parts, and the temple, where especially a great flow of blood is frequently required. But the principal difference in the patent cupping-glass is the screw attached to the top of the glass, and made air-tight, by means of a piece of leather. To this screw is attached another, a little more than an inch long, at the end of which is a piece of sponge; this having been dipped in spirits of wine, and the whole screwed into its proper place, is charged for the operation; and unless blood should be thrown into contact with the sponge, there will be no further occasion during the operation to take off the screw. You then introduce the wax taper and ignite the spirit, which will produce the required vacuum, upon instantly applying it to the part required."—pp. 17—19.

"When you are near the part selected for the operation, ignite the sponge and place the glass gently on the skin; the flame in the glass cannot come in contact with the skin, and will be extinguished in two or three seconds."—p. 26.

"To remove the glass turn the screw, the air rushing in will allow it to fall off gently in the hand."—p. 27.

So far from considering the above alteration as an improvement, we consider it quite the reverse. From the construction of the glasses, they are open to all the objections urged against those to which an exhausting syringe is attached. In our opinion it renders the operation more complicated; the glasses are very liable to get out of order, and when they cease to be air-tight, of course they are useless: we cannot help thinking, that the patient is in more danger of suffering from the effects of the heat, than by the common apparatus.

A Mr. Clark, in the London Medical Journal, for April, has suggested an improvement in the cupping-glass. "This is to insert into the glass a small piece of silver, which, by its elasticity is made to remain on the top: to this is suspended a piece of sponge, by means of a small silver wire."—p. 60. This we consider to be a better mode of rarifying the air in the glass than Mr. Kennedy's, and is free from one of the objections which we made against the latter gentleman's apparatus—namely, the glasses not remaining air-tight.

The Editor has seen Mr. Kennedy's apparatus, but does not think it advisable to give any positive opinion for or against it, till he has seen it tried. It certainly appears to be ingenious, and if the glasses can be kept air-tight, he thinks it probable it may be useful. Mr. Kennedy ought to add scarificators to the apparatus.

M. Vacca Berlinghieri *on Trichiasis**.—The operation advised by the learned Professor is performed by means of a

* Nuova Giorn. di Litterati.

small sabre-shaped knife, and an instrument, which he calls a *spoon*, very similar to the silver instrument, commonly used for steadying the eye in operations. The directions are as follows:—

"The patient being properly placed in a chair, the face turned towards the light, an assistant places himself behind the patient, his breast presenting a firm rest for the head of the person operated on, as in the operation for cataract. The operator, placed immediately in front of his patient, either standing or sitting, as may be most convenient to him, raises up the eyelid, and ascertains the number of hairs that are inverted, and the extent which they occupy. Having done this, he traces with a pen and ink a line upon the integument covering the eyelid, parallel to its free margin, and a quarter of a line distant from it; and this line is to be extended in length, so as to show with precision, upon the surface of the lid, the space which the misdirected lashes occupy on the internal surface. He then introduces the spoon between the palpebræ and the globe of the eye, in such a manner that the free margin of the former is placed in the groove which is situated on the convex surface of the instrument. He then draws this from the globe of the eye as much as possible, to prevent it from being irritated, and to extend the palpebra more thoroughly. Having done this, he confides the spoon to an assistant, who, with his right hand, if the eye operated upon is the right eye, (if not, with his left,) draws, distends, and fixes the palpebra upon the spoon, by means of the index and middle finger placed upon the angles of the eyelid, so as to leave the part to be operated upon exposed and free. With the other hand passed under the patient's chin, he will hold the handle of the spoon, taking care to maintain it in the position in which it was delivered to him by the operator. Things being so disposed, the surgeon makes, with the knife above delineated, two small vertical incisions, which are to commence a line and a half above the free margin, and are to terminate precisely at that point. These two parallel incisions include exactly that space which is marked out by the inked line, and are only to include the integument. The lateral incisions being finished, a third transverse one is to be made beneath the line marked upon the palpebra, and parallel to it. This is to unite the two lateral incisions, and is also to include the skin only. A flap being thus formed, it is to be turned back, taking hold of it either with the forceps or between the nails, and dissecting it with the knife from the parts beneath. The flap being turned back, the bulbs present themselves; but it is not always easy to perceive them clearly, and to remove them, because not only does the blood contribute to conceal them, but the fixed cellular membrane that surrounds them does not render it very easy to lay hold of them. On this account the surgeon must clean the wound thoroughly from the blood, and be provided with a very fine and excellent pair of pincers; and with these, and the knife, or with a small pair of forceps, take away all that are found between the inverted skin

and the external face of the free margin of the eyelid. That being done, the operation is finished; and the surgeon re-applying the flap of integument to its natural position, keeps it easily in its situation by means of adhesive plaster, without the necessity of any other dressing.

"It is necessary to observe, that, if the inverted lashes are at a distance from one another, and in the interval between them there are many of the hairs having a natural and proper direction, it will be advisable only to destroy the bulbs of the former, without disturbing those of the latter. It is not necessary to discuss the modifications which this operation requires when performed upon the lower eyelid; the experienced surgeon can readily adopt his means to the different circumstances of the two cases."

Case of Trichiasis.—Leopold Storzi, of Pisa, thirty-five years of age, of a good constitution, was attacked, in the year 1814, with a violently acute ophthalmia, which terminated in an abscess in the globe of the right eye, and in chronic ophthalmia of the left, which at length produced the inversion of the cartilage of the upper eyelid, and consequently of the lashes implanted in it. In 1823, this man presented himself at the hospital. The common operation for trichiasis was performed, and for a time the cure appeared to be complete. Some months afterwards, however, the chronic ophthalmia reappeared, and the man returned to consult Professor Vacca, who found that the cartilage maintained its proper direction, but that three hairs, rather longer and larger than ordinary, having abandoned their natural position, rubbed against the eye. The patient would not at that time submit to an operation, but preferred the extirpation of the hairs, which was repeated from time to time; and he did not come back to the hospital till the 24th of April, 1825, the eye then being in a high state of inflammation, attended with an obvious opacity of the cornea. M. Vacca now persuaded the patient to submit to his new operation, and, having laid bare the bulbs, he destroyed them by means of the nitric acid. This rendered the operation both extremely short and easy, but it was not less painful. The pain, however, soon yielded, and a very trifling degree of inflammation and suppuration succeeded. On the fifth day, the hairs not having fallen off, and continuing to produce great inconvenience to the patient, the Professor extirpated them with the forceps; the irritation of the eye then disappeared. On the sixth day, the little wound resulting from the operation was healed, and the hairs which, after common extirpation, were usually renewed at the end of eight or ten days, had not shown themselves at the end of two months; but a small depression was, as usual, observed in the situation of the bulbs that had been destroyed. The complete deprivation of the hairs from that portion of the palpebral margin which suffered from the action of the caustic, must also be noted. For forty days all the lashes remained in their proper situation, and every one was surprised that the operator had been so fortunate as only to destroy the bulbs of the inverted hairs; but, at that epoch, they began to fall off one after the other, and the surprise ceased.

Mr. Benjamin Bell *on the Stages of Gonorrhœa**.—It is important to distinguish the stages of those disorders, whose frequency has established a routine and empirical practice. Mr. Bell's remarks on gonorrhœa are hence very useful.

"*First*, or *Acute Irritable Stage*—During this period of gonorrhœa, when inflammation has not yet taken place, every effort should be made to lower the system; for it has been observed, that the severity of the inflammatory stage depends in some measure upon the degree of irritation which has previously existed.

"In order to accomplish this object, the patient must be confined to a low diet, his bowels should be relaxed by means of mild purgatives, and the cuticular secretion promoted by the daily employment of the general warm bath. The purgatives which seem best suited for allaying mucous irritation, and more especially where the urinary organs are the parts principally concerned, are those of that class which promote free and watery alvine evacuations, without acting violently on the colon or rectum, or affecting the chemical composition of the urine. Sulphur alone, or combined with magnesia, senna, castor-oil, blue pill combined with ipecacuan, or calomel in conjunction with antimony and opium, are peculiarly applicable, as they have a secondary effect upon the skin. Rhubarb, the gum-resins, and neutral salts, should never be prescribed.

"*Second*, or *Inflammatory Stage*.—So soon as inflammatory action is fairly established in the mucous membrane of the urethra, recourse must be had to more active treatment. In plethoric habits, blood may be taken freely from the arm; and, in more delicate constitutions, cupping of the loins will be found advantageous. Leeches I am no friend to in gonorrhœa, as they irritate and annoy the patient, and in some cases give rise to troublesome erysipelas, or œdema; and when applied to the perineum, are apt, from the irritation they produce, to occasion painful erections, and to interfere with the use of fomentations, which are in every instance valuable adjuncts. I am not sure how far the general warm bath is useful in the acute inflammatory stage, as in several cases it has seemed to exacerbate the symptoms.

"It is in this stage that ardor urinæ, nocturnal erections, and chordée, exist; and I have seen the agony attendant upon the latter symptom so severe, that the patient contemplated the hour of bed-time with a degree of horror, bordering on despair. In the case of a West Indian gentleman, the chordée was so dreadful, that, at his own hand, he nearly committed suicide, by taking an overdose of opium and digitalis.

"Anxious to discover a remedy which might tend to alleviate the agonies of chordée, without disordering the digestive organs, as opium generally does, it occurred to me, that as camphor is sometimes used with great benefit in irritable affections of the bladder, and aware of the

* Edin. Jour. Med. Science.

experiment of Chrestien on the subject, I determined to give it a fair trial. My experiments with regard to this drug have been hitherto attended with success.

"It must be observed, that camphor cannot be exhibited alone, as it is very apt to give rise to nausea. In combination with hyoscyamus, however, that objection is obviated, for the compound has never, so far as I have observed, given rise to any gastric uneasiness.

"When combined, in the form of a pill, with hyoscyamus, camphor may be pushed to a very considerable extent; and in more than one instance, when severe chordée, attended with spasm of the cervix vesicæ existed, I have prescribed, in the course of twenty-four hours, one drachm of the latter, in combination with two scruples of the former. In general, half the above quantity will be found sufficient; and the rule to be observed in giving them is very simple, for on the occurrence of the slightest symptoms of vertigo, their exhibition should be suspended.

"Camphor and hyoscyamus possess several advantages over other narcotics; they appear to have a decided effect in diminishing the force of the circulation, and they allay irritation, and do not occasion costiveness, or a diminution of the secretion of mucus from the lining membrane of the intestines. In truth, they do not interfere with the exhibition of other medicines.

"Camphor may be employed with advantage in all the stages of gonorrhœa; and in those rare cases where it is found not to agree with the stomach, it may be used in the form of a liniment, rubbed five or six times a day upon the loins, perineum, or groins.

"*Third,* or *Chronic Inflammatory Stage.*—It is at this period of gonorrhœa, when all the acute symptoms have disappeared, that the sagacity of the practitioner has full scope. It is the stage of difficulty. Depleting remedies will be found to prove noxious, and stimulants dangerous. A purgative may induce a serious relapse; and one dose of copaiba, cubebs, tincture of cantharides, or a single astringent injection, give rise to hernia humoralis, cystitis, or catarrhus vesicæ.

"Quiescence will, in this stage, be found the most valuable remedy; the cold hip-bath may be used, and nauseous gruels and slops may be relinquished for animal food. A mild alterative course of the blue pill, with antimony, or ipecacuanha, will also, in many cases, be attended with advantages; and an occasional dose of magnesia, with colomba or gentian, will be of service.

"*Fourth,* or *Chronic Irritable Stage.*—We have now arrived at that stage when the lips of the urethra have assumed their natural appearance, when almost all discharge has ceased, and when the patient experiences merely an occasional slight uneasiness during micturition. This state of atonic iritability, if I may be allowed the expression, is sometimes very obstinate, and requires particular attention on the part of the surgeon. It will yield in many cases to local or general cold bathing and tonics; and in this state I have observed the sulphate of quinine to prove of great service."

M. Regnoli's *Case of Extirpation of the Alveolar arches of the Upper and Lower Jaw* *.—This was a case of extensive fungus and caries, involving the alveolar arches, but distinctly circumscribed.

"Dr. Regnoli persuaded the woman to enter the hospital at Pesaro, for the purpose of submitting to an operation; and after being subjected for a few days to a proper regimen, and having been purged, the operation was performed on the 18th of May, 1825, in the presence of several physicians and surgeons. The patient was seated facing the light; the head supported upon the breast of an assistant, who, at the same time made pressure upon the labial arteries. The operator then divided the whole of the lower lip, and detached it in a great measure from the lower jaw, in order to expose the fungus; he then cut circularly the soft parts and periosteum, below all the alveoli in which the bone was healthy; and upon the fore and more prominent part of the chin, he employed a few strokes of the saw. At this point he inserted a strong cutting scalpel into the groove made by the saw, which he drove in with a few blows of a hammer, first directed to the left and then to the right side; the assistant, in the mean time, drew the jaw downwards and forwards; and the whole osteo-sarcoma was now removed, by merely dividing the soft parts adhering to the internal and concave part of the bone. The last molar tooth on the left side was, however, left untouched, but it did not shew any marks of disease. The arterial branches, which bled profusely, were touched with the actual cautery, as were also the remaining parts in which any suspicious appearance was observed. The removal of the alveolar arch of the upper jaw was performed in the same manner; and the hemorrhage was arrested by the same means. The lower lip was then brought together with three needles, united by the twisted suture. At this time the patient fainted, but was soon restored.

"The symptoms that succeeded the operation were, for the first days severe pain in the head, and consequent deprivation of sleep, with fever, and considerable swelling of the face; which were all overcome on the sixth day, by bleeding, purging, and proper diet. On the 28th day, the cicatrization of the wound was complete; a few pieces of dead bone having been removed some days previously. The appearance of the patient presented but little deformity, the lips turning inwards, but in no great degree; the speech was also somewhat altered; but she was able to eat even bread and meat; was free from pain; and the cicatrix of the alveolar borders was hard and equal, and they could bear to be pressed against each other without producing pain."

M. Boileau's *Case of Ligature of the Carotid Artery*.—A case is stated by M. Boileau, of a man thirty-six years of age, who was subject from infancy to pains in the head. At the age of twenty years, he had an eruption (dartre) on the chin, which

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* Omodei, Annali di Med. Sept.

remained for eight years; its disappearance was followed by increase of the cephalalgia, and by epileptic convulsions, partially caused, or increased, by intemperate habits. On the 19th of July 1822, he received an injury on his head from a fall, which was followed by more frequent epileptic paroxysms, and by mania. On the 22d, heattempted to destroy his life by plunging a knife into the upper part of the neck, thus wounding the *superior thyroid artery*. The hæmorrhage was excessive, ceasing only with complete syncope. Dr. Boileau found him in this state; no pulse or action of the heart evident—respiration very indistinct. He secured immediately the common carotid on the right side. In a quarter of an hour afterwards, respiration was more evident, and gradually reaction succeeded; his mind, however, remaining calm. No unpleasant symptom occurred, and "during the space of three months, that I attended this patient, I noticed a gradual diminution of the symptoms of cerebral irritation, and towards the end of the treatment, *there existed no indication* by which its existence could be recognized. I thought the cure might be radical, if the patient would avoid all sources of cerebral excitement, direct or sympathetic."

This result he attributes to three causes. 1st, The profuse hæmorrhage following the wound. 2d, The resistance afforded to the passage of blood to the head, by the obstruction of one carotid artery; and 3d, The continuance of a severe abstemious regimen.

Mr. Wardrop's *Case of Carotid Aneurism*.—We have already mentioned this case in a former Number, but it is so important that we shall here give it entire.

"A lady, 75 years of age, after a violent severe fit of coughing, perceived a swelling on the right side of her neck, a little above the clavicle. When I saw her, eight days afterwards, the tumour had all the characters of an aneurism of the carotid artery, and had become as large as a fist; but was so situated that it was quite impracticable to tie the vessel below the tumour, so closely did it come in contact with the clavicle. The tumour continued to increase in size, and on the eleventh day after it was first observed, it had acquired a formidable aspect, the scapular portion having become very red and painful; the pulsation, which was very strong throughout the whole swelling, being here particularly so, and the parietes feeling extremely thin, and as if ready to burst.

"It was evident that the patient's life was now in the most eminent danger; and in this hopeless condition it forcibly struck me, that it might be highly expedient to tie the carotid artery above the aneurism, in the hope that, by thus stemming the current of blood through the vessel, nature might establish a new channel to carry on the circulation, allow the blood in the tumour to coagulate, and the sac and vessel to

contract and be obliterated, as takes place after the common operation. There were circumstances which made this case particularly favourable for resorting to such a measure; the aneurism had been of short duration, the patient, though far advanced in years, had a healthy constitution; she was of a tranquil disposition, and eager that something should be done for her relief. Besides, the diseased artery was most favourable for the operation, for as no branches are sent off from the carotid artery until it divides into the external and internal, the process of coagulation would not be interrupted by the continuance of circulation through collateral branches in immediate contiguity with the aneurism. The operation also appeared practicable in this instance, as the aneurism, though large, extended upwards, so as still to leave sufficient space for the application of a ligature between the tumour and the division of the artery.

"Under these impressions, and with the approbation of Dr. Veitch and Mr. Glen, who also attended the patient, I undertook the operation, and the result of it has, in my opinion, fully authorized the measure; and I trust that the future experience of others will confirm its utility. The operation consisted in making an incision through the skin and cellular membrane, rather more than an inch and a half in length, commencing it immediately above the tumour, and extending it on the trachial edge of the mastoid muscle, and in the direction of the carotid artery, taking care to avoid the large superficial veins. The subsequent part of the dissection was chiefly made with a silver knife, guided by the finger, and there was no particular difficulty in reaching the artery but what might have been anticipated, from its great depth, from the necessary limits of the incision, and from the numerous large veins which were carefully to be avoided—particularly a branch which extended across the middle of the incision to the internal jugular, and which consequently diminished the space in which the artery was to be taken up. After a careful dissection, which was tedious from its being necessary to tear the parts with the silver knife, the artery was so completely separated from the adjacent parts, that the point of the finger could be readily passed between the vessel and the vertebræ, and the aneurismal needle, of which I have annexed a particular description, was passed round the artery with singular facility, taking care to avoid the par vagum which was distinctly felt behind the finger. The vessel being previously ascertained to be healthy, one ligature was tied round it, as close to the tumour as the incision would admit, and the lips of the wound were stitched together by a suture, without any farther dressings. The aneurismal tumour was covered with adhesive plaster, in order to protect the tender skin, and at the same time to keep up a certain degree of pressure.

"I thought it probable that the resistance to the circulation, which the ligature would necessarily occasion, might, for a short while at least, after its application, be followed by an increase in the distention of the tumour; instead of which, however, there was an immediate decrease in its bulk, marked by a considerable corrugation of the skin at the

base, as well as a diminution of its redness. The ligature of the artery did not seem to produce any change in the mental functions, or any unnatural feelings in the head; on the contrary, the patient passed the night after the operation more comfortably than that previous to it, the tumour being accompanied with less uneasiness.

"A progressive diminution in the bulk of the aneurism, and in the strength of its pulsations took place, so that on the fourth day after the operation it seemed to have diminished nearly one-third in its bulk; the upper and tracheal portions had lost all pulsation, and only the scapular portion retained an obscure undulatory thrill. The integuments, which had lost their redness, now evidently became more inflamed, and during the fifth and sixth days there was a distinct increase in the size of the tumour, and it pulsated more strongly, which seemed partly owing to several severe fits of coughing. This apparently unfavourable change was, however, followed by a decided amendment; and eight days after the operation the swelling again began to diminish, and the pulsation became more obscure, so that on the fourteenth day it was not much larger than half its bulk at the time of the operation, and no pulsation could be detected in any portion of it; merely a slight vibration in some parts, which seemed to be produced by the pulsations of the contiguous vessels, which were now enlarged, particularly the inferior thyroid artery.

"The redness of the skin, however, continued to increase, and that of the scapular portion of the tumour to become more and more of a purple colour, till, at last, ulceration commenced on the most prominent part. Several considerable-sized portions of coagulated blood were discharged along with some healthy pus through the ulcerated opening: and on the 20th day after the operation, the ulceration of the integuments had closed, and nothing of the tumour remained but some wrinkling of the skin, and a considerable degree of thickening of those parts on which the base of the tumour had rested. These continued to diminish, and at the end of the fifth week from the time of the operation, the neck had nearly resumed its natural form, a slight degree of inequality only remaining: the ligature had come away, and the patient's general health, to the management of which the greatest care had been bestowed, appeared now to be completely re-established.

"This case appears to me to prove satisfactorily, the possibility of the success of this mode of operating for aneurism, and of the important advantages that are likely to be derived from it, more especially in those cases which have hitherto been considered beyond the aid of surgery.

"The operation may also, under particular circumstances, be preferable to tying the ligature between the aneurism and the heart, even in cases where that operation is practicable. For, as in that which I have just narrated, had it even been possible to have tied the artery between the tumour and the heart, how much more dangerous and difficult would the operation have been, and how much greater would have been the risk of secondary hæmorrhage at the place of the ligature.

"The only circumstance which must be considered as indispensible to

the success of this mode of operating is, that there is no vessel arising either from the sac itself, or from the artery between the sac and the ligature, sufficiently large to keep up the circulation of the blood through these parts, and thus prevent its coagulation. I say sufficiently large, for it is perfectly ascertained that, after the common operation of tying the artery between the tumour and the heart, pulsation to a certain degree often continues for some time, notwithstanding which, neither the gradual process of coagulation in the tumour is prevented, nor the subsequent contraction and condensation of the aneurismal sac and insulated portion of the artery.

" When an aneurism is cured spontaneously, it is evident that, in general, the process must, in like manner, be slow : and that the circumstance of the circulation through the tumour being rendered languid, equally suffices to admit of the blood coagulating, as if circulation was completely stopped.

" These considerations lead me, therefore, to hope, that the operation of tying the artery beyond the aneurism will, in many instances, be successful, even though the current of blood through it be not completely stemmed. To ensure, however, this being done, the ligature should be made as close to the tumour as possible, in order to preclude the chance of leaving a branch between the tumour and the ligature, which would carry on the circulation; and I can even conceive cases wherein it might be practicable to tie such branch separately, so as effectually to prevent the circulation being carried on through the aneurism."

VI. PRACTICE OF PHYSIC.

Schmidtmann's *Treatment of Pneumonia* *.—The author speaks in the most favourable terms of the employment of opium and calomel in the treatment of this disease, as well as in other inflammatory affections. For this practice he acknowledges himself indebted to Dr. Robert Hamilton. He states, that when he first heard of this practice, it appeared to him in the highest degree objectionable, but that he was at last induced to employ it on the strong recommendation of the celebrated Vogel. His first experiment with this remedy, he informs us, far exceeded his expectations, and he afterwards employed it, in nearly every case of inflammatory disease for more than twenty years, with decided advantage. " Prima pericula," he says, " omnem longe superabunt expectationem meam : quare viginti abhinc annis et ultra non facile morbus inflammatorius mihi obvenit ; et multi cententi mihi obvenere, cui *opium et*

* Summa Observationum Medicarum ex Praxi clinica triginta Annorum depromptarum. Auctor Lud. Josepho Schmidtmann. Med. Apud Melenses in Principuta Osnabrugensi. Vol. II. pp. 328—372. 8vo. Berolini, 1821.

calomel faustissimo cum successu non opposuissem: *ast non stricte secundum præcepta Hamiltonii.*"

After the general inflammatory symptoms had been in some degree subdued by bleeding and other antiphlogistic remedies, our author, almost uniformly prescribed one or two grains of calomel with one of opium, mornings and evenings, and in obstinate cases a similar dose at noon. In addition to this he applied vesicatories over the part affected, and ordered a decoction of senega and jalap, with camphor and muriate of ammonia. He rarely found it necessary to bleed more than three or four times.

We are fully persuaded that opium with or without calomel is a much more important remedy in inflammatory diseases than is generally admitted. In gout, dysentery, acute rheumatism, and pneumonia, we have frequently ordered this combination in large portions, with unequivocal advantage. It is proper to observe, however, that bleeding, and, in general, purgatives and other antiphlogistic remedies, should always be premised where the general iaflammatory action is very considerable. With these preliminary measures, the use of the calomel and opium, in doses of from one to two grains each, twice, thrice, or even four times a-day, will, in general, prove decidedly beneficial.—Dr. Armstrong, whose testimony deserves great respect, speaks very highly of this combination in certain inflammatory affections. The paper of Dr. Hamilton on this subject, he says, "deserves to be engraven in letters of gold."

Having given the general results of his experience in relation to the pathology and character of pneumonia, the author details sixteen cases of this disease, of which a few only appear to be sufficiently interesting for selection.

"A man, aged thirty, of robust and athletic frame, was suddenly seized with chills, succeeded with febrile heat and a pungent pain in the left side. May 15. Complains of great pain in the head; the countenance is flushed; the tongue covered with a whitish and dry slime; the taste natural; no appetite; thirst intense; no cough; but the most vehement pungent pain in the left side. The pulse was frequent, hard, vibrating, full; the skin hot and dry, and the urine small in quantity and deep red. He was immediately bled to the extent of 16 ounces; and emulsion of gum arabic, with nitre and tartar emetic, was prescribed. An emollient cataplasm was laid on the affected slide. The blood drawn was covered with a thick layer of size. In the evening the pain in the side was mitigated.

"May 16th. The pain in the side much increased; the heat of the skin intense; the thirst unquenchable; no cough; pulse frequent, large, hard, and vibrating. Ten ounces of blood was drawn; and decoction of senega, with nitre, camphor, tartar emetic, and simple

syrup, was ordered. In addition to these remedies, two grains of calomel and one of opium were given mornings and evenings.

" 18th. An hour after the opium and calomel was taken, the pain and oppression of the chest disappeared as if by enchantment, and a universal and profuse sweat broke out. He could now breathe without difficulty or pain ; the fever also soon abated very considerably.

" 19th. The breast entirely free from pain and oppression. The calomel and opium were continued until the evening of this day, when he was declared convalescent.

" A man, aged twenty-one, was attacked with chills, succeeded by heat and a violent pain in the left side of the chest ; the cough was troublesome, and the thirst excessive—the pulse was but little accelerated, small and soft. This case was treated like the preceding one, with bleeding, emulsion with nitre and camphor, blisters to the side, calomel and opium, &c. The case, nevertheless, proved fatal, and is introduced merely for the purpose of adverting to the expectoration of a pseudo-membraneous substance on the ninth day of the disease, similar to that which sometimes occurs in croup.

" This membraneous exudation was cylindrical, hollow, and of considerable length. Pieces of the same substance continued to be spit up for several days afterwards. On the 12th day the patient died."

The expectoration of a membraneous substance is of very rare occurrence in pneumonia. Our author states that, so far as he knows, Morgagni is the only writer who distinctly mentions such a circumstance. Perhaps the case mentioned by Tulpius is one of this kind. This writer states, that a patient who was long affected with a troublesome cough, expectorated two considerable branches of veins—duos insignes venarum ramos, adequantes singulos expansæ manus magnitudinum. There can indeed be no doubt that these supposed " venous branches" were any thing else than indurated coagulating lymph.

An instance of a polypus substance, of branched form, coughed up by a boy affected with catarrh, is mentioned by Callisen. Wichmann has noticed a similar case. In the case mentioned by Strack (Hufeland's Journal, vol. vii. p. 162) we are left uninformed as to the character of the disease in which the membraneous expectoration occurred. He simply states that it was coughed up.

Epilespy *treated with Artemisia Vulgaris* *.—We are somewhat doubtful of the effect of the roots of this plant in spasmodic or neurotic diseases, though it certainly bids fairer for success than the new German practice of giving herring milts for laryngeal phthisis. The following cases, one of epileptic convulsions, the other of chorea, are given as successful :—

The first was a child, six months old, nursed by a healthy mo-

* Hufeland's Journal.

ther, and had been subject to convulsions, without any known cause, for two months. The attacks came on five or six times a day; were ushered in with a piercing cry, after which the eyeballs were so forcibly drawn upwards that the transparent cornea was invisible: the limbs were then affected with clonic spasm for the space of ten minutes, which state was succeeded by an extreme relaxation, as if the whole muscular system was paralysed. The child would then fall into a profound sleep, which generally continued about an hour and a half. An emetic; laxatives continued for a week; zinc, given with extract of hyoscyamus, and afterwards with musk, produced no effect. Five grains of the powdered root of the artemisia vulgaris were then mixed with an equal portion of sugar, and divided into twelve doses, of which four were given during the day. At the end of three days the mother of the child thought the attacks seemed less violent; and the child had only had three fits on the third day, which had never before been the case from the commencement of the disease. In three days more the effects of the medicine were more evident; the fits only came on thrice a day, and their duration and severity was diminished. At the end of a fortnight the paroxysms were very slight, and they soon afterwards altogether ceased. By way of precaution, two doses were given daily for some weeks, and the child has now been more than a year in perfect health.

The subject of the case of chorea was a girl of ten years of age, of a scrofulous constitution, and who had been affected with glandular enlargements and chronic ophthalmia. The latter affection having spontaneously disappeared for some months, she became, by insensible degrees, the subject of decided chorea. The complaint being suspected to arise from worms, various anthelmintics were given, as well as several doses of calomel and jalap; but no worms were discharged, and the patient became worse. Narcotics were then tried: the powdered root of belladonna, as far as half a grain every three hours, which produced dryness of the throat, but had no effect on the chorea. Zinc, valerian, and the ammoniated sulphate of copper, were given without advantage. Ten grains of the artemisia vulgaris were then administered with a little sugar every three hours, until a drachm was taken in the course of a day: blisters were, at the same time, applied to the calves of the legs, and a slight discharge kept up. After a few days there was a decided amendment; the amendment continued; and in a short time the girl became entirely free from complaint.

Dr. CARTER's *Case of Rheumatic Palsy.*—Sarah Weller, aged twenty-two, married, was made in-patient Dec. 18th. She had totally

lost the use of the right arm and leg, from exposure to a current of air. The face was not affected; the arm and leg were much swollen, and acutely painful at all times, but especially upon the slightest motion. The fingers were firmly closed upon the palm; and the attempt I made to straighten them was fruitless, and produced intolerable anguish. The pulse was, in both wrists, extremely feeble; tongue loaded; bowels constipated; menstruation regular; appetite and rest none, owing to the pain of the affected limbs. A cathartic draught was ordered immediately. Catamenia appeared on the following day; and little or nothing was done till the 23d, when, on account of the great debility, inf. gent. comp. cum vino ferri ʒij. was ordered thrice a day. Vapour was tried to the arm and leg, leeches twice, and stimulating liniment.

29th.—There was scarcely any improvement. The patient could indeed move her little finger, but it was in a very slight degree. The pain was still great; she complained much of her head. The tongue continued much loaded, and the bowels constipated. Inf. gent. comp. cum vino ferri omitted. Calomel gr. v., and afterwards ʒvj. of magnes. sulph. Fiat V. S. and ʒx. Mist camph. cum liq. ammon. acet. ʒij., vini semin. colch. gut. xl., pulv. ipec. comp. gr. v., horâ somni, et repet. sextis horis, persistente dolore.

Jan. 1st.—Bowels freely evacuated; blood exhibited no sign of inflammatory action going on; but, on the contrary, it was in a very dissolved state; pulse feeble; local affection not at all diminished. We now returned to a tonic plan; mist. ferri comp. ʒx., mist. camph. ʒss. ter die. Full diet, and porter. The draught at bed-time was continued.

3d.—No alteration. Cont. med. Electricitas partibus affectis. From the first day she was electrified, she began to regain the use of the arm and leg; and by the 24th, she had recovered completely.

I saw the patient after the lapse of several months, and she continued perfectly well.

Dr. Goelis, *of Vienna, on the Diseases of Children**.—The following are a few of the methods of treatment employed by this experienced practitioner:—

"*Thrombus Neonatorum.*—Dr. Goelis is adverse to opening the sanguineous tumours upon the heads of new-born children, because in his experience they have generally died. In this result, however, Dr. Brosius does not concur; neither have we ourselves ever seen any evil ensue from opening them. At the same time, we believe it to be utterly unnecessary, as they generally disappear spontaneously. We usually, however, apply a lotion, with muriate of ammonia; but we are not prepared to say that any real benefit is derived from it.

"*Febris Cærulea.*—This is a disease of a peculiar nature, not to be confounded with the morbus cœruleus, which is the consequence of disease of the heart. This is its description:—

* Hufeland's Journal.

"It attacks children from four till twelve months old,—none older; and these for the most part of the poorer class, who live upon coarse food, and dwell in dirty and damp habitations. The disease comes on in paroxysms. Children become suddenly blue, respiration difficult, and the pulse small, hard, and wiry. These attacks endure for some time, disappear and return again. Soon the paroxysms become more frequent, and at length pass into each other. The skin is frequently covered with a clammy perspiration. Death takes place suddenly. On examination of the body, the blood vessels are very much distended.

"Dr. Goelis considers this disease as of a spasmodic nature, and recommends preparations of opium, together, however, with purgatives of calomel and rhubarb.

"*Convulsions.*—The convulsions of infants are for the most part the consequence of inflammatory action of the brain; and Goelis never admits of stimulating remedies, as these only render, according to his experience, the convulsions more frequent. Calomel is one of his principal medicines.

"*Scarlatina.*—When the eruption in this disease does not follow the proper course, Goelis recommends bathing the body with tepid water as very advantageous; while, on the other hand, sudorifics, in the commencement of the disease, he has always found injurious.

"*Morbilli—Measles.*—When the measles occur during vaccination, they both run their course undisturbed by each other.

"*Tinea Capitis.*—The treatment of this disease is tolerably well known now in England; but Dr. Goelis asserts it to be of scrofulous origin; and Dr. Brosius remarks, that when the dried crust of tinea, finely powdered, is rubbed by any one upon the moist skin, true scrofula ensues.

"*Scabies.*—There is a species of scabies, or rather a psora cutanea, which is not contagious. It frequently appears after vaccination.

Dr. Robert's *Case of Eneuresis* *.—D. D. aged 52, about six years since, was attacked with inflammation of the respiratory organs, from which he recovered; but was shortly after affected with pain in the occipital region, which continued to annoy him for some time. He made repeated requests to the medical attendants to bleed him, but they were not complied with; and it was not until after a great deal of importunity he was permitted to be cupped, which afforded considerable relief to the headache. Partial or imperfect paraplegia gradually supervened, and continued until death. The circumstance which most annoyed him, was incapability of retaining his urine, which constantly dribbled from him. The first time I saw him, was about four months before his decease, and his complaints then were those of gastric derangement; and to the relief of which I principally turned my attention, as I was well convinced, from the length of time which he had been suffering, there was no very great prospect of success in

* Edinb. Journ. Med. Sciences.

curing his other maladies. His principal symptoms were, short tickling cough without expectoration, loss of appetite, gastrodynia; but the eneuresis was the most annoying.

On the 20th December 1825, I was requested to call and see him. I found him confined to his bed, and suffering severely from pain in his legs and thighs, very much resembling rheumatism, and which at intervals attacked every part of his body. I ordered him some mistura guaiaci of the London Pharmacopœia, to which I added some laudanum and the vinum colchici, and his bowels were endeavoured to be kept open; but this was only partially accomplished, and it was with very great difficulty they were compelled to act. The mixture relieved him greatly, and he had some sleep; but, at my next visit, the pains were returning; his pulse was 120, and full; he was bled to ℥viij, when syncope was threatened. The coagulum was cupped and buffed. The next day he was much improved, and made no complaints but of hoarseness, which he attributed to cold caught whilst sitting up in bed to be bled.

On the following day he was rapidly sinking; his pulse was hurried and feeble; the tongue was coated with thick brown fur; his speech was husky. I now ordered him four grains of the sulphate of quinine, in a mixture of which he was to take one fourth part every six hours. This had the effect of cleansing the tongue in as rapid a manner as it had been before coated, and the sordes peeled off, leaving the tongue covered by a thin glaze, and very red. He now made no complaint, except of a return of cough and a continuance of the hoarseness. The expectoration was copious, of a dark colour, but not fetid.

On Christmas morning I visited him about 11 o'clock, *a. m.*; his pulse was about 110, moderately full, not by any means denoting the approach of death. The expectoration had become more pale, and was voided in larger quantity. He expired, however, at 4 o'clock, *a. m.* of that day. During the whole of the attack, I had the greatest difficulty in getting the bowels to unload themselves, both by the use of purgatives and enemata.

After some importunity I was permitted to examine the body. On cutting open the abdomen, there remained but a very small portion of the omentum. The general appearance of the intestines was healthy, but on tracing them from the stomach, I discovered a fold of the ilium, which had fallen down into the pelvis, and was pressed against the upper part of the sacrum, by the thickened and very much distended bladder. This portion of the gut was very black. On continuing the examination, the viscera were found to be healthy, except the descending branch of the colon, which was tied down very firmly to the side of the spine, close over the kidney and psoas muscle of that side. It had lost all the distinguishing form of that viscus, the longitudinal bands having disappeared. Its caliber was also diminished, as the canal would with difficulty admit the little finger; the coats were much thickened. The kidney of the left side was quite healthy. That of the right was nearly three times the natural size, and full of pus. The ureter was

greatly enlarged, and about an inch from where it m akesits exit from the pelvis of the kidney, it doubled back upon itself. The bladder was considerably inflamed, and its coats were very much thickened, bearing evident proof of its not having been able, at least for some considerable time past, to contract to its proper size. The lungs were filled with vomicæ, and tubercles beginning to suppurate. There were many old adhesions, which were so firm and of so long standing, as not to allow the hand to be passed between the pleura pulmonalis and costalis, which on being attempted, stripped the latter from the intercostals. The heart was found lying directly under the sternum. There was some water in the pericardium.

I was not permitted to examine the cerebrum.

Costiveness and slow action in the bowels were the only symptoms in any way significant of visceral disease.

VII. MIDWIFERY.

Case of Extra-Uterine Pregnancy in the Fallopian Tube.*—The subject of this case was a young woman who died suddenly without any known cause, and whose body was examined by order of the magistrates.—The external surface presented no other lesions than ecchymosis of the umbilical region, and left hypochondrium and thigh. The cavity of the abdomen was filled with numerous clots of blood. On removing them, a body presented itself twice the size of a goose egg, formed of transparent membranes, through which a little fœtus could be distinguished, a male, floating in the liquor amnii, and apparently in the fourth month. A rupture of the Fallopian tube was easily detected, in the cavity of which the fœtus had been developed. The uterus appeared somewhat larger than in the unimpregnated state, its colour brighter and its texture softer. Its internal surface was lined with a membranous layer, soft, floculent, and of a yellowish colour. The right Fallopian tube was little dilated, and covered with considerable vessels. Both ovaria were large. The left tube had completely lost its natural form, and presented itself as a membranous sac, firm, and composed of numerous and large vessels. Its fimbriated extremity embraced the ovary on the same side; but the end next to the uterus was obliterated, so as not to permit the passage of a probe.

Dr. Holcombe *on Ergot*.*—The author advocates the practice of giving small and divided doses, often repeated, instead of large doses of the ergot, which he considers as having destroyed

* Nuovo Giorn. dei Letterat. No. 22. † Philadelphia Journal.

more children than the improper use of instruments. Given in this manner, the uterus acquires so great energy, that the difficulties of first labours, and even of a contracted pelvis, may be overcome. It has appeared to prevent puerperal fever, in the practice of Dr. Holcombe. It also suppresses the lochia, without injury to the mother. When flooding after delivery is apprehended, in cases of partial prolapsus of the uterus, and of habitual bearing down, Dr. Holcombe prescribes it also with effect.

He also uses it to lessen the size of the child, in cases of contracted pelvis; gives medicine, and a smaller quantity of food than usual, to the mother. It reduced the bulk of the child, in one instance, to five and a half pounds: the usual size of the children, by the same mother, was ten pounds. A lady who had two miscarriages, and though the child each time died about the seventh month, the labour was difficult, from the size of the fœtus. Accordingly, in a third labour, Dr. Holcombe gave pills of calomel three grains, squills two grains, and digitalis one-fourth of a grain, and repeated it thrice a day, in order to lessen the size of the child, and with effect. He thus succeeded in producing four children of a small size, which could not, without the aid of a medical regimen, have been delivered. The plan generally followed was to administer the pill thrice a day, and forty drops of laudanum twice a week, and to be bled every month. As soon as the mouth becomes sore the calomel was omitted, and again resumed when it got well. Where the health of the mother is delicate, or predisposed to consumption, this plan would certainly endanger her life. I have heard of a case, where this was the consequence of using a spare diet alone: the mother died of consumption, after the child was delivered. It must, therefore, be used with discretion.

Mr. Waller *on Ergot in Lingering Labours.*—We think it important to collect all the facts respecting ergot, which are ascertained in Britain, as the Americans begin to doubt whether our medicine is the same as theirs.

"Notwithstanding" says Mr. Waller, "the mass of satisfactory information which has of late been accumulating with regard to the efficacy of the secale cornutum, in increasing the expulsatory efforts of the uterus, I find that a degree of scepticism still prevails on the subject; and therefore the following cases, which have occurred under my own observation, may not be uninteresting to your readers, as contributing to the general stock of knowledge which we already possess.

"The two first cases in which I exhibited the remedy were, if my recollection serves me, (for I omitted to take notes of them,) very unsatisfactory, no apparent effect being produced by it; but in both the

uterine action had nearly ceased, the pains being very trifling indeed, with long intervals between them. I employed the ergot in the way recommended by Dr. Merriman—that is, in infusion; two drachms of secale cornutum, coarsely pulverized, and six ounces of boiling water poured upon it. After allowing it to stand twenty minutes, three ounces were given, and in the course of a quarter of an hour the remainder. I now resolved to increase the strength of the infusion for the future, using eight scruples instead of two drachms to six ounces of water; and a case, which occurred on the 6th of April, 1825, convinced me that the remedy was one of considerable power.

"From several cases, I am led to infer that the secale cornutum is a remedy which is capable of increasing the force of the uterine contractions in a most remarkable manner, under certain circumstances; but that the effect is doubtful, unless there be some degree of action present. In other words, that, although it will increase the contractions when already present, it will not always renew them when they are suspended.

"That the effect is more certain if the infusion be of greater strength than is usually recommended; two drachms of the secale to six ounces of water being barely sufficient for the purpose.

"That it appears to be a stimulus peculiarly fitted for irritable, and what are generally termed nervous habits.

"That the fears entertained by some practitioners of its proving detrimental to the child are groundless.

"But, although it is in general necessary, not only that there should be a disposition for labour, but that this processs should have actually commenced, before we can expect the secale cornutum to have any effect upon the uterus, still one solitary case has indirectly come to my knowledge, (and I will vouch for the authenticity of it,) where this remedy was given for the purpose of producing abortion in a female about the second month of utero-gestation; and this effect was accomplished in a few hours after its exhibition."

"111, *Aldersgate Street, March* 1826."

Dr. Taylor's *Case of Ovarian Abscess* *.—This patient, aged 35, had laboured four or five years under what was supposed to be dropsy, for which she had been tapped; and when no water was found, it was pronounced to be encysted dropsy.

"At the time of my first visit, she was labouring under a harsh cough, accompanied with mucous expectoration, together with great dyspnœa, particularly on motion. Much difficulty was also experienced when lying in the recumbent posture, so much so as to render it necessary to prop her up in bed. The pulse was weak, and somewhat irregular, and she complained much of flatulency and constipation. Her abdomen was unusually large, presenting the appearance of a person labouring under ascites: there was also some œdema of the lower extremities. Fluctuation was very indistinct.

* North American Med. and Surg. Journal.

"In this urgent state, I ventured to encourage some hope of relief, by the use of purgatives of gamboge and super-tartrate of potash, inasmuch as the state of the bowels indicated their employment as an incipient step in the treatment. After the operation of the first purgative, she was soon able to lie in a horizontal position, and to walk across the room. The purgatives were continued for a day or two longer, apparently with much advantage. Diuretics were exhibited for a few days, and a copious diuresis was the consequence. On the 31st of January, the patient was submitted to the care of my friend Dr. Wiltbank, who deemed it proper, from the then existing symptoms, to administer tonic remedies, which were persisted in until her death, which unexpectedly took place on the 3d of February.

"From the interesting history of the case, we were particularly desirous of making a *post mortem examination*—which was accordingly proposed, and was submitted to by the friends of the deceased. Dr. Wiltbank and myself commenced the dissection, by making a longitudinal incision along the whole course of the linea alba. In the first place, the anterior part of the abdomen presented an unusual degree of thickness, at least two inches, although the skin and adipose substance appeared very thin. Upon continuing the dissection still further, under an expectation of entering the cavity of the peritoneum, we were considerably surprised at the ejection of a large stream of genuine pus. The unexpected and sudden discharge of this immense quantity of purulent matter induced us to apply for aid to some more experienced anatomist. In consequence of which, Doctors Horner and Hodge were called upon and politely proffered their services. The whole of the pus being discharged, which amounted to the almost incredible quantity of four gallons, we proceeded to the examination of the tumour containing it. On separating it from its adhesions to the surrounding parts, it was discovered to be the right ovarium, completely altered in its organization—occupying all the cavity of the abdomen below the margin of the thorax—protruding the intestines, liver, &c. very high within the cavity of the ribs, and when removed and emptied of its contents, weighing seventeen pounds. The vascularity of the tumour was remarkable—arteries and veins, as might have been conjectured, running in every direction.

"After having completed the examination of the ovarium, our attention was next directed to the state of the uterus; which, contrary to our expectation, presented a perfectly natural and healthy appearance. The other contents of the abdomen were found, with the exception of some adhesion and thickening of the coats of the intestines, in a natural state."

Singular Birth of three Children, stated in a Letter from L.J. Trotti, *of Carolina.*—Some time in the year 1815, a negro woman, belonging to Mr. Allen, of Barnwell, South Carolina, was delivered by a natural unassisted labour of three children: two of them were *white* males, the other a perfectly *black* female.

These three children were born in such quick succession, that the only attendant present, (a female,) became frightened and fled, leaving the children on the floor of the apartment. No untoward symptom succeeded, and the mother was perfectly restored in a few weeks.

The two boys are now alive, and full grown for their age. In consequence, however, of the mother's neglect, who appeared particularly attached to the sons, the girl did not survive longer than eighteen months.

Having, in company with other gentlemen, visited the mother and children, expressly to ascertain the truth of these facts, I have no hesitation in stating the above mentioned circumstances as correct: the case appears to be interesting in several points of view, both physiological and obstetrical.

Mr. Duges *on Twins.*—From a review of registers at Paris, out of 37,441 accouchements there have been 36,992 parturitions; 444 twins; 5 triplets.

Sexes.—Out of fifty-four twin cases, taken at hazard, five have given a boy and a girl; thirteen, two girls; and twenty-six, two boys; this last proportion, which is one-half of the whole, seems to be the most common. In two triplets, observed by Mme. La Chapelle, in one there were three girls; and in the other, two girls and a boy.

Volume and Weight.—Twins are generally smaller than infants which are alone in the womb. The average weight of twins is four pounds each, and the extremes are three pounds and eight pounds, so that the same total weight remains. Triplets have rarely a less weight than twins, provided they are not born prematurely.

Disposition of the Envelops.—Sometimes the twins are contained in one membranous envelop only, and are bathed in the same waters; but this is a very rare case. Madame La Chapelle has never observed it; and both twins and triplets delivered by her have been each in a separate sac, and divided by a union of the two chorions and the two amnions. The epichorion is simple, and surrounded by both sacs. In some cases, the chorion does not make a part of the division; and there is but one for both fœtuses. Dr. Duges himself, however, has never met with this disposition of the membranes. The placenta is more frequently single than otherwise; the proportion has been almost as three to two. Moreover, we meet with every variation of union, from single contact to complete union, without even a line of separation being visible; so that sometimes there is an anastomosis of the vessels of one fœtus, with those of the other; and sometimes the anastomosis does not exist. When it is present, it is

not by means of the capillary system; for, in the same placenta, even the capillaries of one cotyledon do not communicate with those of the other. The anastomosis is always affected by large vessels, such as ramify on the fœtal surface of the placenta.

Position.—In comparing the position of twins, out of fifty-four accouchements, in thirty-six the infants have presented the same part to the mouth of the uterus, as the head, the buttocks, &c.; eighteen presented different parts, as one the head, another the shoulder, &c. In this last case, it was not always the first-born which exhibited the most favourable position.

Dr. Rheineck's *Case of Extirpation of the Uterus affected with malignant Fungus and inverted.*—A woman, about thirty-eight years of age, was, after delivery of her third child, for almost a year troubled with a partial prolapsus of the vagina, which was at last removed by using a pessary. Soon after she became again pregnant, and, in the third month, in consequence of having made some sudden exertion, the prolapsus vaginæ returned as before. In this state she continued even to the end of her pregnancy, without having adopted any measures for her relief; the prolapsus gradually increased in size, so that two months before the time of delivery it was as large as a full-grown child's head; painful, and always accompanied with the sensation of a dragging weight from the loins. When the patient wished to sit down, she was obliged to sit between two stools. About three weeks before her expected time of confinement she fell down, the protrusion suddenly increased in size, some of the liquor amnii escaped, and when the midwife arrived she found a foot presenting through the tumour. A lithographic sketch accompanies this case from which it appears that the tumour reached half way down the thigh, and in circumference, was about the size of the thigh. The child was discovered to be dead; the orifice of the uterus was sufficiently dilated in a short time to allow of the delivery of all the child, with the exception of the head, which was obliged to be perforated. The prolapsed parts were afterwards carefully returned, and by the diligent use of astringents persevered in for two months, the evil was permanently removed.

VIII. MEDICAL JURISPRUDENCE.

Article in the New Edinburgh Journal.—In No. 2. of the Edinburgh Journal of the Medical Sciences, an article is inserted under this head, written in a very questionable strain of remark. The amount of the whole is to demonstrate that Medical Jurisprudence, or rather Lectures on Medical Jurisprudence are of equal if not paramount importance to any other branch of medical study. The writer, (whom we should guess to be some lecturer on the subject in pursuit of a chair,) completely over-

shoots his mark. We admit, indeed, the high importance of Medical Jurisprudence, and grant that a knowledge of its principles may often save the innocent, and consign the guilty to ignominious punishment; but it is quite laughable to maintain that it is as important to practitioners as Anatomy, Surgery, Pharmacy, &c. The author has given the most flagrant instance of proving too much that we have lately met with. The following paper, which we extract from the same Journal, is much more creditable to it:—

On the Marks of Vitality in New-born Infants :—

Dr. Joseph Bernt, Professor of Medical Jurisprudence in the University of Vienna, has published *Centuria experimentorum docimasium pulmonum hydrostaticam illustrantium*, (4to, Vienna, 1824.) in which he seems to have made some advances towards the removal of the ambiguity which still hangs over that almost daily occurring duty of the profession, in cases of suspected child murder, in which we are called upon to decide, "*whether the lungs of the infant body before us have ever been inflated with air during life.*" Notwithstanding all the captious objections of Mauchart, Bohn, F. Hoffmann, and Heister, on the Continent, and their repetition afterwards by the Hunters in Britain, it still continues to be generally admitted by the public, and is indeed substantially correct, that a lung which has once been inflated with air, by the usual process of respiration, not only floats in water, but so high in it, as also to be able to bear the weight of the heart attached to it; while a fetal lung, which has not undergone this process, as generally sinks to the bottom. This is also the opinion of Dr. Bernt, and confirmed by an hundred experiments in the work before us. There every now and then occur instances, however, in which circumstances modify this general law in so absolute a manner, that the case becomes completely reversed; and a lung which had breathed regularly for weeks or years sinks regularly to the bottom; whilst that which had been subjected to this process, ascends to the surface. It is needless here to inquire into the causes of such anomalies; they are abundantly explained in all books of medical jurisprudence, and are, in general, of such a nature as easily to escape the routine practitioner, who may, consequently, by the errors they induce, be innocently led to yield protection to the guilty, or even, under careless judges, to sacrifice an unfortunate mother, guilty of nothing, perhaps, but concealing the inanimate evidence of her shame, to the imperfection of science, or of his own private opportunities of acquiring information.

It is, on all accounts, therefore, desirable that some means should be devised of adding to the certainty of medical evidence on this interesting question. In Germany, every petty provincial town has a chair for medical jurisprudence, and an office of *staats medicus*, generally occupied by scientific and conscientious persons. In learned Germany, however, even in Vienna itself, Professor Bernt informs us, that his colleague, the Professor of Public Medicine, so late as the year 1821,

had made four repeated mistakes of this kind, in immediate succession; having officially asserted that four different children had died before birth, when the legal evidence ascertained "*luce clarius*," that they were born alive, and had lived some hours! The method of Dr. Bernt, in addition to a diligent attention to the other phenomena, consists essentially in ascertaining the *relative gravity of the lung*. Thus, if the lung of a new-born child, which generally weighs about an ounce and a half, *sink in water*, he observes how many grains, acting over a pulley, will just raise it to the surface. A lung of an ounce and a half may generally be raised by half a drachm. If they *swim in water*, he notices how much it takes to sink them. In lungs (if, corresponding to the above, they weigh, when inflated, about six scruples more) he notes how many grains are necessary to sink them to the bottom. About 160 grains may be necessary for this purpose. He repeats these experiments with the heart attached to the lungs; and the whole of them a sufficient number of times to ascertain the relative proportion of these in an average way; and we have thus, he thinks, a steady hydrostatic test, sufficient to distinguish the steady relation of the inflated and fully circulating lung, to that which has never been fully permeated either by blood or air, from the incidental, and consequently unsteady, conditions which occasionally seem to vitiate the general principle. Dr. Bernt enjoys the advantage of having the bodies of all the still-born children of the Lying-in Hospital of Vienna at his disposal. The *real state* of these, before death, can always be ascertained; and the doubts which might originate in other cases, are avoided in his results.

It was in pursuing these researches that Dr. Bernt hit upon an observation, which, if correct, will establish the distinction of an inflated from an uninflated lung, upon the most solid foundation. He seems himself to consider it as an almost infallible test.

The circulation of a child undergoes an extensive revolution the moment it breathes, and the placental subsidiary action becomes suspended. The blood arriving at the liver by the umbilical vein, is withdrawn from that organ, which ought to be rendered so much *lighter* by its abstraction; and the lungs, by the blood of the ductus arteriosus flowing through them, must have become proportionally heavier. The mere examination of these circumstances, in a new-born child, will go far to determine whether it has breathed; but the test which he chiefly rests upon, is the appearance and situation of the opening of the *foramen ovale*. *This hole, in a child which has never breathed, is exactly in the bottom of the fossa ovalis; but, as soon as the child has breathed, the aperture becomes turned towards the right*: in *several weeks* it has ascended *very high*: and, in the adult age, is found to have arrived at the *summit of the oval*. In other words, from the moment respiration commences, the aperture of the foramen ovale begins to travel from the lower extremity of the oval hole towards the upper, proceeding from *left* to *right*: and the degree of advance it has made becomes an index of the existence and duration of the respiratory process. This semi-revolution of the aperture around the centre of the axis of

the foramen ovale, after birth, so important in an anatomical and physiological, as well as docimastic point of view, is, in some degree, hinted at by our countryman Dr. Hamphry Ridley, Obs. de Cord. Embryon. Lugd. 1750, at p. 180—4; but afterwards more fully developed by Dioboldt, in 1771. The reason of the phenomenon, Dr. Bernt conjectures to be the contraction of the muscular fibres of the *isthmus Vieussenii;* but we are ourselves inclined to attribute it rather to the diminished resistance offered, after birth, to the stream of blood projected from the right ventricle, and the consequently increased resistance to that which is simultaneously sent from the left. It is known, that accumulation in the right ventricle generates also an accumulation of blood in the right auricle, and even in the venæ cavæ which open into it. As long as this state continues, the lower cava, aided as it is by the placental contribution, will be predominant; and ascending from below, will keep the valve of the oval hole from adhering to the edges, from above downwards; or in other words, will preserve the aperture at the *bottom* of the fossa. But, as soon as the aortal resistance is withdrawn from the right side of the heart, by respiration, and the placental supply, from the lower cava, by obliteration of the cord, the equilibrium becomes almost perfect between the ascending and descending cava, in the infant; and the centre of their joint impulse must be brought up near, or beyond, the central diameter of the oval hole. The valve, however, can only be displaced gradually in this direction; and, accordingly, it is not before the adult age, that the aperture arrives at the top of the valve. This ascent is much assisted by the preponderance of the left ventricle, which, reacting against the whole resistance of the circulation, lessens the angle of position of the axis of the right heart to the axes of the hollow veins, and thereby the line of pressure upon the oval hole, *in the direction upwards.* At all events, whatever is the theory, the fact is most valuable; and we consider both the docimastic methods above adduced, as affording simple, easily practicable, and therefore, most valuable, additions to the jurisprudential part of our profession; and to that part of it which is never exercised without great hazard of the reputation, and certain laceration of the feelings, even to the most conscientious practitioners.

Dr. Shoemaker's *Cases of Poisoning from eating Pheasant*.*—It is a well known fact, that during the Winter season, especially when the ground is covered with snow, pheasants have recourse to the *laurel* for sustenance, which, although it may be a harmless article to them, is nevertheless known to be an active poison. By thus feeding, their flesh becomes so charged with the deleterious qualities of this vegetable, as to be capable of producing very alarming symptoms, when taken into the human stomach, as the following cases will manifest:—

Case 1st.—On the afternoon of the 14th of February, 1826,

* North Amer. Med. and Surg. Journ.

I was requested to visit in haste, the wife of J. D., who was said to have been suddenly attacked, and very ill. I immediately obeyed the call, and on arriving at the house I found her with incessant retching, and complaining of a distressing pain on the top of the head, which extended down in the direction of the cervical vertebræ, with cold extremities, and pulseless.

Her husband, who is an intelligent man, informed me that she had dined on a pheasant—that in about half an hour after dinner she was seized with sickness of stomach, followed by a temporary blindness, and that he believed she was poisoned.

I desired the servant maid to examine the spot where the bird had been prepared for the spit, to ascertain whether any of the *laurel* could be found. She soon returned, bringing in her hand a considerable number of the fragments of the leaves of this vegetable. This discovery confirmed our suspicions of poison.

Supposing there might still be remaining in the stomach some portion of the poisonous article, I reflected upon the best method of dislodging it. To administer the common active emetic medicines, where the system was already brought into a state of great prostration from the powerful sedative effect of the poison on the stomach, appeared to me a practice that would be inadmissible. It occurred to me, that as there was combined with the stimulant qualities of *mustard* an emetic principle, that it was an article peculiarly suited to this case, I accordingly gave her a table-spoonful of the common flour of mustard in some warm water, which increased the efforts of the stomach, without appearing to add to the existing debility. After I was satisfied that nothing more remained in the stomach, from the water being ejected nearly as clear as she drank it, I ordered a large sinapism to be applied to the epigastric region, and smaller ones to the wrists and ankles; gave her a small tea-spoonful of laudanum, with as much æther, and directed warm brandy and water to be given her to drink.

This plan succeeded in putting a stop to the retching; her extremities soon became warm, and her pulse returned at the wrist; but for a considerable time, it beat only *forty-three strokes in a minute*. On calling in the evening I found her comfortable, and able to take a cup of tea.

Case 2d.—While I was occupied in administering to this patient, my attention was suddenly arrested by a strange noise, which proceeded from a young woman then in the room, and who had been engaged but a moment before, in assisting me. Upon turning to her, I found she looked extremely pale, and was breathing with great difficulty, which appeared to arise from a spasmodic affection of the glottis, which so contracted the aper-

ture, as to occasion in the act of respiration, the unusual sound which first attracted my attention. She complained of extreme sickness of stomach, which was soon followed with a temporary blindness, and a severe pain down the back of the neck. Her extremities became cold, and the pulse beat only *forty strokes in a minute*, and very feebly.

Being informed that she had eaten of the same pheasant, I had no hesitation in referring the symptoms she then laboured under to that cause. I immediately gave her a table spoonful of the *flour of mustard* in a glass of warm water, which enabled her completely to disgorge her stomach; after which a dose of laudanum and a little warm brandy and water effectually relieved her.

IX. MATERIA MEDICA AND CHEMISTRY.

Adulteration of the Sulphate of Quinine.—Among the frauds practised in adulterating medicine, we have to notice a very serious and flagrant one practised chiefly in France—that of adulterating sulphate of quinine with sulphate of lime (gypsum.) The solubility of the two substances will perhaps be the best mode of detection; but we have not yet had leisure to try them since we were informed of this nefarious malpractice.

Mr. CARPENTER, of Philadelphia, *on the Sulphate and the Spiced Syrup of Rhubarb**.—"Boil for half an hour ℔vi. of coarsely powdered Chinese rhubarb in six gallons of water, acidulated with two and a half fluid ounces of sulphuric acid, strain the decoction, and submit the residue to a second ebullition in a like quantity of acidulated water, strain as before, and submit it again to a third ebullition; unite the three decoctions, and add by small portions recently powdered pure lime, constantly stirring it, to facilitate its action on the acid decoction. When the decoction has become slightly alkaline, it deposites a red flocculent precipitate, and the fluid is changed from a yellow to a crimson colour; the precipitate is then to be separated by passing it through a linen cloth, and dried; after which reduce it to powder and digest in three gallons of alcohol at 36° in a water bath, for several hours, at a moderate heat; separate this solution from the calcareous precipitate, and distil off three-fourths of the alcohol: there then remains a strong solution of rhubarbine, to which add as much sulphuric acid as will exactly neutralize it; evaporate this slowly to dryness, without having access to atmospheric air, the residuum will be of a brownish red colour, intermingled with brilliant specks, possessing a slightly pungent styptic taste, soluble in water, and its odour that of the native rhubarb

"This preparation is a concentrated form of that valuable cathar-

* American Medical Recorder.

tic, separated from the ligneous and mucous portions, and bears a similar relation to the crude substance as quinine does to Peruvian bark.

" From the experiments which I made upon several varieties of rhubarb, I found the Chinese to be the most active, and that variety which has been denominated in the market Russian, and which commands double the price of the Chinese, produced about one half of this principle, and consequently is much less active than the former. This rhubarb, in fact, appears to be nothing more nor less than the English variety, suitable pieces of which have been picked, bored, rasped, &c. in imitation of the Russian, but which wants in degree all the characteristic properties of weight, solidity, compact fracture, and particularly the essential quality of cathartic energy, which are all so strikingly exhibited in the Russian variety, and in corroboration of which Dr. Paris, in his excellent work, the Pharmacologia, under the article rhubarb, states that inferior kinds of Russian, East India, and English rhubarb, are artfully dressed up and sold under the name of Turkey; and I am well informed that a number of persons in this town, known in the trade by the name of Russifiers, gain a regular livelihood by the art of dressing this article, by boring, rasping, and then colouring the inferior kinds; for which they charge at the rate of eighteen-pence per pound. I had not an opportunity of making an experiment on the Turkey rhubarb, as I could not procure what accorded with the physical characters of the genuine article. The difference in the medicinal activity of these several varieties must essentially depend upon climate and cultivation, as it is asserted by Dr. Rehman that they are the roots of the same species, rheum palmatum, (although all the dispensatories and pharmacologia consider them distinct species, and ascribe the Chinese to be the rheum undulatum, and the Turkey of the rheum palmatum), and it is established beyond controversy that climate and cultivation are two of the most powerful agents in modifying and altering the condition of vegetable matter.

On the preparation of spiced Syrup of Rhubarb.—Paris, in his Pharmacologia, states that water at 212° takes up twenty-four, and Thompson thirty parts in sixty, and by decoction its purgative qualities are destroyed, which decoction is extremely turbid and deposits a copious precipitate on cooling, and will be decomposed by standing a few days, whilst alcohol takes up 2.7 from ten parts, without the mucous portion, and is perfectly transparent and will remain unaltered by keeping. Hence as water takes up a large proportion of mucous and inactive matters, and as decoction destroys its properties, I think a very important alteration might be made in the formula for the preparation of the syrup of rhubarb of the shops, by substituting a concentrated spirituous tincture of the rhubarb, spices, &c. in lieu of the aqueous decoction of the same, and to add it near the conclusion of the formation of a syrup of proper consistence. The alcohol in this mode cannot be objectional, as it need not much exceed, if any, the proportion of spirit in the former method to prevent the fermentation of the aqueous decoction, and if these circumstances are correct, it certainly will be a more

active and eligible preparation, and well deserves the practical investigation of the faculty. This preparation does not enter the works of Paris or Thompson, but is given by Dr. Coxe in the late editions of his standard work, the American Dispensatory, in the manner now prepared, and is very extensively employed in this city, perhaps as much so as any other pharmaceutical compound, and if its activity could be increased, it no doubt would be a desirable object; it now requires a large dose to be effectual and sometimes frequently to be repeated, insomuch that its use is almost exclusively confined to children, the dose for adults frequently exceeding two ounces which is certainly objectional, and excludes its use in those cases where (if more active) it would be extensively employed to advantage.

Extract of Rhubarb.—This preparation according to the method now pursued is very feeble. The protracted heat necessary to evaporate the water, and the absorption of oxygen acts so unfavourably during its formation that its purgative properties, although not entirely destroyed are so greatly impaired that its use has become almost abandoned by the profession. By the following process, however, a much more active preparation may be obtained, and where the use of the extract is approved this will be found to possess the proper characters.

Take of coarsely bruised Chinese rhubarb lbj, digest in six pints of alcohol for seven days and filter, distil off the alcohol in a water bath to the consistence of thin honey, then evaporate to a proper consistence in a water bath saturated with muriate of soda.

By this process much less heat and time is required to evaporate the menstruum, and owing to the alcohol much less oxygen is absorbed, and an extract of much more activity thus obtained. This mode is certainly more expensive, but if the product is more effectual as a medicine, this small difference should not be objectionable, as most of the alcohol is saved by distillation, and in the preparation of all medicines a preference should be given to that method which will render them more active and effectual, without regard to expense, unless it be exorbitant and the difference inconsiderable, for I think at least where health is implicated, pecuniary interest should not be considered.

Composition of the Atmosphere.—Mr. Dalton states, that he has found the oxygen in the atmosphere to vary from 20.7 per cent. to 21.15 per cent. In its general state, Mr. Dalton found from 20.7 to 20.8. per cent. But no conclusion can be drawn from differences so slight as here related, unless the experiments have been made with scrupulous attention to accuracy. Until this is done, the strong probability remains that the composition of atmospheric air corresponds with two atoms of azote and one atom of oxygen, which gives 20 per cent. as the proportional amount of the oxygen by volume. We are the more inclined to this opinion, as the progress of experimental inquiry is constantly reducing the quantity of oxygen. By numerous experiments, made with the very accurate eudiometers invented by Dr. Hare, the proportion of oxygen by volume very little exceeds 20 per cent.

Discovery of Lithia in the Mineral Waters of Bohemia.—Berzelius,

in a letter to Dulong, he states that he has discovered the rare alkali lithia, as a constant and essential constituent in these waters. He also considers it as very probable that sea water contains this alkali.

Thorina not a distinct Earth.—Berzelius has ascertained that the substance announced by him, about ten years ago, as a new earth, under the name of thorina, is really a subphosphate of yttria.—*Journ. of the Royal Inst., Jan.* 1826.

We are glad to receive this information, as it clears up a difficulty, under which we have laboured for some time past, that thorina, though a discovery of Berzelius, should not be mentioned by this chemist in his Essai sur la Théorie des Proportion Chimiques, published in 1819.

Simultaneous action of oxygen and alkalies on organic substances.—Mr. Chevreul has ascertained that several substances are acted upon by the combined power of oxygen and alkali, though not affected by either of these agents separately. Some of the substances in this predicament are hematin, colouring principle of Brazil wood, cochineal, flax, gallic acid, ox gall, colouring matter of blood, and albumen.

Considering these facts, Mr. Chevreul is led to make the following queries:—

Have not the alkaline liquids of the animal system a different relation to oxygen from the acid liquids?

May not the alkaline matter contained in the blood have some influence in the function of respiration?

Is the alkalinity of the fluids, destined during life to receive the impression of the air, essential to the chemical changes which occur in respiration? or is it an independent condition, having no agency in those changes?—Mêm. du Muséum, xii. 367, as quoted in the Journal of the Royal Institution, Jan. 1826.

Peculiar blue matter, obtained from certain urines.—Mr. Braconnot has lately subjected to chemical examination a specimen of morbid urine, of a deep blue colour, voided by a girl who had vomited a matter of a similar colour. The colour depended on a blue matter held in suspension, which was readily separated by the filter. When examined it was found to be pulverulent, of extreme tenuity, insipid, inodorous, and of a tint deeper than Prussian blue. Mr. Braconnot, considering the blue matter as a peculiar substance, and, from its aptitude to combine with acids, analagous to the organic salifiable bases, proposes to call it Cyanurin.

Upon heating the urine, from which the blue matter was separated, another principle in the form of a very black sediment is deposited; for which Mr. Braconnot proposes the name of Melanurin. Mr. Braconnot thinks it probable, that it is the presence of this substance which gives rise to the black colour of certain urines.—*Ann. de Chimie*, xxix. 252, *July*, 1825.

Method of detecting minute portions of Corrosive Sublimate.—Mr. Nicole, apothecary, at Dieppe, has lately put in practice Mr. James Smithson's method of detecting this poison. It depends upon the decomposing galvanic action excited by the contact of gold and tin. Mr. Nicole

proceeded thus : a piece of rolled tin-foil was wound round a gold ring. A portion of the poisoned substance (an omelet in the case reported by Mr. Nicole) is then put into a watch-glass, mixed with a little distilled water, and the ring, armed with the tin-foil, brought in contact with both. Upon the addition of a drop of muriatic acid, the little pile is brought into action, and determines the decomposition of the mercurial salt, the mercury being revived upon the gold, which it whitens.—*Jour. de Pharmacie, Sept.* 1825.

Method of detecting adulterations of Balsam Copaiva by Castor Oil.—Castor oil is frequently used to adulterate the balsam copaiva. The fraud may be detected by subjecting the suspected sample to a prolonged ebullition in water, or by the addition of caustic soda. By the former test, if the article be impure, a soft substance of various degrees of consistence is obtained ; if pure, the residuum is a hard and brittle resin, amounting to half the weight of the balsam. By the test of caustic soda, the pure balsam is converted into a whitish liquid, which, in half an hour, separates into two distinct layers, the lower one somewhat thick, and the upper, entirely composed of the balsam. If the article be adulterated, the alkali converts it into a whitish saponaceous mass, which at the end of twenty-four hours becomes hard.—*Jour. de Pharmacie, Sept.* 1825.

Medicinal Principle of Garden Lettuce, or Lactuarium.—Mr. François purposes to obtain the narcotic principle of this plant by making incisions into its stem at the time of flowering. When thus obtained, he proposes for it the name of thridace. Mr. Roman, in commenting on Mr. Francois' method, objects to it, on account of the small product which it enables the operator to obtain.

Mr. Roman prepares the principle in the following manner :—He takes thirty pounds of lettuce and deprives it of the leaves and summits. The stems, after being cut into small pieces, are bruised in a marble mortar, and afterwards macerated for six hours in about twelve and a half pints of water. The whole is then strained. The strained liquor, after having been allowed to rest, is boiled for a few minutes, in order to separate a green fecula. It is then filtered and evaporated to a proper consistence. From the quantity of lettuce above mentioned, Mr. Roman obtained six ounces of a reddish brown extract, of a resinous appearance, attractive of moisture, and possessing a taste similar to that of the extract of opium. Its properties are, besides, the same as those of the thridace of Mr. Francois, producing the same effects in the same doses.—*Revue Medicale, Aug.* 1825.

Mr. Dublanc, Jun. has ascertained that this substance does not owe its narcotic power to the presence of morphia. *Ibid.*

X. MISCELANEOUS.

Regulations for the Navy Medical Board.

Victualling-Office, 23d Feb, 1826.

The right honourable the Lords Commissioners of the Admiralty hav-

ing been pleased to direct, 'that no person be admitted to be a candidate for the situation of assistant-surgeon in the royal navy, who shall not produce a certificate from one of the royal colleges of surgeons of London, Edinburgh, or Dublin, of his fitness for that office; nor for that of surgeon, unless he shall produce a diploma, or certificate, from one of the said royal colleges, founded on an examination, to be passed subsequently to his appointment of assistant-surgeon in the navy; and that in every case the candidate producing such certificate, or diploma, shall also undergo a further examination before the medical commissioners of the victualling board, touching his qualifications in all the necessary branches and points of medicine and surgery for each of the steps in the naval medical service;' the commissioners for victualling his Majesty's navy, &c., do hereby signify, for the information of those persons to whom it may relate, that these regulations and directions will be strictly adhered to in future; and further, that previously to the admission of assistant-surgeons into the navy, it will be required that they should have received a classical education, and possess, in particular, a competent knowledge of Latin; also

That they should have served an apprenticeship, or have been employed in an apothecary's shop for not less than two years.

That their age should not be less than 20 years, nor more than 26 years.

That they should have attended an hospital in London, Edinburgh, Dublin, or Glasgow, for 12 months: and

That they should have attended lectures, &c., on the following subjects, for periods not less than hereunder stated, viz.

Anatomy - - - -	18 months.
Surgery - - - -	18 ditto.
Theory of Medicine - -	12 ditto
Practice of ditto - - -	12 ditto.
Chemistry - - - -	6 ditto.
Materia Medica - - -	6 ditto
Midwifery - - - -	6 ditto
Actual dissections of the human body	6 ditto

Although the above are the only qualifications that are absolutely required in candidates for the appointment of assistant-surgeon, a preference will be given to those who, by possessing a knowledge of the diseases of the eye, and of any branch of science connected with the profession, such as botany, medical jurisprudence, natural philosophy, &c. appear to be more peculiarly eligible for admission into the service.

It is also to be observed, that by the rules of the service, no assistant-surgeon can be promoted to the rank of surgeon until he shall have served full three years in the former capacity; and the board have resolved that not any diploma or certificate of examination from either of the above named royal colleges, shall be admitted towards the qualification for surgeon, unless the diploma or certificate shall be obtained on an examination passed after a period of not less than three years' service as assistant-surgeon.

M. Derheims *on Leeches* *.—It has been commonly supposed that only two sorts are employed in practice, to wit, the officinal and the black leech; but Mr. Derheims asserts, that many other sorts are constantly used and sold in France. He gives the following list of useful sorts :—

1. Hirudo Officinalis, 2 do. Sanguisuga, 3 do. Octoculata, 4 do. Complanata, 5 do. Stagnorum, 6 do. Geometra, 7 do. Swampina, 8 do. Muricata, 9 do. Alpina.

Of all these he gives some description, but of none so fully as of the officinal species.

"The form of this endo-branchial worm may be considered, says he, in two different states; when contracted it presents a body almost ovoid, when elongated the body is flattened; in its maximum state of elongation it becomes a cylindrical tube, the head of which can, with difficulty, be distinguished from the posterior extremity. The back of the officinal leech is black, with yellow rays, the belly yellowish, spotted with black. These parts are clearly defined, the first being almost plane, the second convex; each extremity is furnished with a cup, (ventouse,) the functions of both of which shall be examined. Finally, considered as a whole, the animal is a protractile tube, formed by the union of a number of rings, sheathed in a common envelope, and lined with a mucous substance, which may be regarded as a peculiar matter proper to the leech."—p. 11.

The natural habitation of this kind he supposes to be pure still waters, as fresh ponds, for they reside there in great quantities; and if they are sometimes found in running streams, it is rather accidental than natural for them.—p. 12.

Though they are denominated aquatic worms, water should not be considered as essential to their existence, for they live a long time in moist ground or mud, or in moss, impregnated with water. We have seen a proof of the propriety of this remark in a reservoir of these animals, containing several thousands, and consisting only of a humid earth, mixed with rushes and moss, in which they burrow like earth worms, and are dug out for use. Mr. Derheims says, they frequently perish if deprived entirely of earth; whence he infers, that water serves to maintain their suppleness, by keeping the mucus with which they are invested, of a proper consistence, and a due condition of which is essential for their health and existence. The officinal sort is rarely met in company with other species. The hirudo sanguisuga is occasionally met with but not in considerable quantity. Both kinds leave the streams and ponds, to crawl over the damp meadows, and sometimes in stony places, where they attach them-

* Historie Naturelle et Medicale des Sangsues. Par J. L. Derheims, Pharmacien.

selves to the udders of cows, and the genitals of the horse—they also suck toads and snails, and even each other. These expeditions are generally made after sunset, and principally by the officinal leech.—p. 13, 14.

"The black leech, H. Sanguisuga is long, of a greenish black colour, spotted with deep black; the belly is entirely black, the lateral lines yellow; it is more protractile, and less contractile, than the officinal sort. Its back is flatter—it inhabits ponds and still waters, and was formerly considered poisonous, an opinion which we shall presently refute."—p. 19.

This is the leech which is called by Parr the horse leech; but Mr. Derheims does not agree with him that it should be so called. He says, that some years since the hirudo officinalis only was employed in medicine; the scarcity of the species has now dissipated the vulgar prejudice that the other sorts are poisonous, and at present an indiscriminate use is made of the complanata, octoculata, and even sanguisuga; they are all sold either in common with the officinal species, or alone, at a lower price, for the latter will always merit a preference.

Our limits will not permit us to follow Mr. Derheims through all his observations on the senses of these worms, some of which they possess in a high degree; neither can we trace with him their anatomical structure, their diseases, and mode of reproduction: we shall proceed, therefore, to topics of more immediate importance.

"It is true, says he, in accounting for some embarrassments in their use, that the application of the leech is often confided to improper persons, who are strangers to any surgical knowledge, and that squeezed in the callous skin of their fingers, they suffer much distress, and refuse to take hold; but this is not the only cause of their refusal to bite; the neglect of attention to cleanliness of the skin on which they are placed, contributes a great deal to this refusal. We know enough of the nature of the perspiration, to allow the supposition that it exerts a very decided chemical action on the nervous papillæ of the leech's mouth. The condition of the animal ought also to be considered, for it is sometimes in a state wholly unfit for suction."—p. 122.

This unfitness results from the loss of its teeth, in the manner to be hereafter shown, and to its being preserved when already gorged by the improper bait which has been used in catching it, &c.

Complaints were laid before the French police on the subject of these embarrassments and disappointments; a committee of the Royal Academy, consisting of MM. Pelletier and Huzard, jun. was appointed on the following questions:—

"Why are the wounds made by leeches sometimes poisonous? and, 2d, Why do leeches sometimes refuse to attach themselves to the skin?

Their report, which was adopted, contained the following conclusions: 1st, If the wound produced by the leech ever becomes poisoned, it is owing to the constitution of the patient, or the nature of the disease. 2d, If leeches, when applied, refuse to attach themselves to the skin, it is owing to their having lost their teeth."—p. 123.

The officinal leech has three teeth, which may be seen within the upper disc or cup. These are sharp and tolerably stiff, and attached to a sort of circular basis, from which they are easily torn off, by pulling away the animal when it is in the act of suction. These teeth penetrate the skin vertically, and swell when inserted, so that they are sure to be left in the wounds, if any force is used to pull them off."—p. 124.

Mr. Derheims has tried this experiment, and found such to be the result; which, besides occasioning inflammation by the presence of an extraneous body, causes the destruction of the worm, as far as any future employment of it is concerned; such a leech could never bite again. Mr. Derheims, from his anatomical investigation, is led to believe that the leech cannot feed except with its teeth inserted into the substance it feeds on; and, therefore, the custom of smearing the surface to be bled, with sugar and water, or blood, is useless, as far as any baiting or quickening of the appetite is intended. The only benefit of this practice, consists in the increased facility of glueing the disc or cup, to the surface, which allows the suction to be more complete, on smooth and moist surfaces. Sugar and water answer very well for this purpose, but cream, or any unctuous matter, disgusts them.—p. 126.

The most certain method of causing them to bite is to soften the skin, and clear it completely of all perspirable matters; for this purpose a solution of soap should be used, and followed by plenty of tepid water, after which the skin should be wiped dry with fine soft linen. The leeches should be of a medium size, and well selected; the largest ones are often without teeth. They should be taken out of the water sometimes beforehand, not, as vulgarly supposed, to make them disgorge, but in order to accustom them somewhat to the influence of the air, and even to the temperature of the patient's apartment.

When voracious, they may be applied to the part by being held slightly in the fingers, one by one, but very tenderly. Or they may be put in a glass goblet, covered all except one edge, with a piece of linen, and the whole applied close on the spot to be bled. As they will not stick to the polished glass, or to linen, they are in some measure forced to attach themselves as the surgeon pleases to the skin. With good leeches this method is almost infallible.—p. 127.

Where the patient's skin is very hot, he recommends that they should be brought to a temperature of about 88°, by means of tepid waterpoured over them. p.—128.

When they are to be applied to the anus, great care must be taken to have the part washed very clean, and rendered soft by warm water. Sometimes the hair disturbs them, and it should, therefore, in such cases, be shaved off from the part.—132.

While sucking, especial care should be used not to touch or disturb them, or they will immediately let go; neither should the patient be placed too near the fire, as any considerable warmth makes them fall off.—133.

They should always be allowed to fall off of their own accord The bad effects of forcibly abstracting them, or of cutting them in two, or using any stimulating applications, have been referred to.—135.

Such as fall off spontaneously may be used a second time, for they remain possessed of their tooth: they should be put in a weak solution of salt in water, to make them discharge the blood they have ingorged. Some leeches which have been carefully disgorged, have been employed six or seven times equally well. p. 136. In this country oftener.

Mr. Derheims does not approve of the practice of cutting off the lower extremities of the leech, while in the act of sucking, because in a majority of cases it will immediately drop off: but, at the Pensylvanian hospital, where the animals are scarce, such a practice is of great value and importance.

In catching leeches, the best and safest method is to take them by hand, but as this is not always practicable, a net may be used, consisting of a coarse hair cloth stitched on a wooden circle, with sinkers of lead fastened on at proper distances apart: the net is then secured by a number of strings, so as to hang at the end of a convenient sized fishing pole. This instrument carried into the water in an oblique direction, may be passed under the leeches, which are thus taken without injury. They should then be put into jars containing a sufficient quantity of wetted moss, (sphagnum.) They are also taken in France by means of pieces of calves liver thrown into the pools, to which the animals come and attach themselves, but such as are thus taken, are not so good, being already gorged by the bait.—p. 74.

They are commonly carried for sale in earthen jars, or little casks, or runlets of wood, or in hair cloth bags, always, however, accompanied with moss, well moistened; or small bits of sponge, as when sent for sale beyond sea.—p. 76.

Leeches sometimes keep very well, but on other occasions they perish in great numbers, for besides the atmospheric changes

to which they are very sensible, they are subject to several diseases not dependent on this cause.—p. 77.

The first thing to be observed in regard to their domestic preservation, is not to interfere too much with their locomotion. Too many are commonly crowded together in small jars, a circumstance which contributes a great deal to their destruction. When obliged, however, to keep them crowded together in this manner, the water should be frequently changed, using great care not to wound them. On these occasions, they should be cleansed of the mucus which adheres to them; without being freed from the mucus, no leeches can be healthy, and hence the value of the moss so often spoken of, by crawling over and through which they are able to disembarrass themselves. They should not be covered with too thick a cloth.—p. 78. The dead ones should be carefully removed, always. Mr. Derheims gives very abundant and satisfactory details of the method adopted for preserving them in large quantities, but we have not space enough to permit the exposition of this interesting information here.

It sometimes happens that an epidemic disease appears in the reservoirs of leeches, on which occasions they perish in vast numbers. In general it is best, under these circumstances, to place a quantity of charcoal in the water wherein they are kept, in order to disinfect it. For this purpose let the bottom of the reservoir be covered with small bits of charcoal, which may be kept down by covering it with a layer of moss, over which a number of pebbles should be strewed. When considerable numbers are sick, let them be well washed in several waters, then be placed in a separate wide mouthed vessel and covered with powdered charcoal; after being left in this state three or four hours, water may be freely added; they are next to be lifted carefully out, exposed to the air for a few minutes, and then may be safely committed to their cleansed habitations floored with charcoal, moss, and pebbles, as above.p.—99.

As a proof of the disinfecting power of charcoal used in this way, Mr. Derheims informs us that not long since, a dealer wrote to him from England, that for two weeks past she had lost from 150 to two hundred per diem, out of a reservoir which originally held 10,000; while from another, containing 20,000, she lost only a few each day. Mr. Derheims advised her to place the sickly ones for a few days in a small quantity of water, and to cover them with pounded charcoal, after which she was to wash them in several waters. This was punctually executed; the next day only nine died, and three on the following day. His account of the use of charcoal is very interesting.

Biography of M. Beclard.—Peter Augustine Beclard, was born at Angers, on the 12th of October, 1785. His father, a respectable tradesman of that city, but on whom fortune had not extended her favours, encouraged by the disposition he early manifested, sent him to the central school of that city, and bestowed on him as good an education as his limited means allowed. Young Beclard soon displayed a decided taste for the study of the natural sciences, and devoting himself with particular care to the acquisition of Botanical knowledge, was honoured with several prizes at the Jardin des Plantes of Angers. With an evident inclination for intellectual pursuits, however, he was destined to pursue the same career as his father, and with this intention was sent to Nantz, and afterwards to Tours, where he was compelled to engage in business. But notwithstanding all the entreaties and exertions of his friends, and in defiance of his own efforts to comply with the wishes of his beloved parents, Beclard was unable to control the strong bias of his genius, and repress the intenseness of his thirst for knowledge; and to this cause, we must refer the rescue from the drudgery of a commercial life, of a mind intended by nature to move conspicuously in a more elevated sphere. Nor were the period and existing circumstances less propitious to the accomplishment of this important end. The Revolution had removed all the obstacles which were occasionally encountered by individuals of the tiers etat, who aspired to the honours of the Doctorate; and the celebrated Bichat had already attained the zenith of his glory. His name and works were subjects of general conversation, even in the remotest provinces of France, and therefore could not long remain unknown to one, so diligently employed in the cultivation of scientific subjects. Animated by a noble ambition, Beclard felt on many occasions a degree of envy of the fame enjoyed by this great physiologist, and from this moment seems to have manifested an irresistible desire to engage in the same pursuits.

Unable at last to repress his son's ardent thirst after knowledge, and positively assured by the tradesman to whom the latter had been entrusted, that he was totally unfit for a commercial life, the father allowed him, though reluctantly, to prosecute the study of Medicine, and afforded him the means of attending the course of instruction delivered at the Hotel Dieu of Angers. Finding himself, now, placed on a field more congenial to his disposition, Beclard engaged in the study of Anatomical and Surgical sciences with the most unremitting zeal, and in the course of one year was deemed sufficiently advanced to be admitted as one of the house pupils of that Institution. After remaining there four years, and acquiring a high character for ability and industry, he repaired to Paris, (in 1808) and soon signalized himself at the various courses of the hospitals of that capital. Obtaining one prize after another at the practical school established by the faculty of medicine, he was pointed out as the most brilliant pupil of that Institution, and shortly after was selected by Mr. Roux for the office of his assistant lecturer (répétiteur) at La Charité. It was not long before

Beclard, at a public concourse, and in opposition to many able competitors, succeeded, as chef des travaux anatomique to M. Dupuytren, who had just been promoted to the chair of operative surgery, vacated by the death of the celebrated Sabatier. About this period, Beclard began to deliver private lectures on anatomy and surgery, and so great were the talents he displayed in the difficult act of teaching, that his success exceeded the most sanguine expectations.

In the year 1813, Beclard obtained the honours of the Doctorate, and on this occasion presented a thesis, in which he offered several original opinions in anatomy, physiology, and surgery. Two years afterwards an opportunity presented for displaying his rare surgical talents. A concourse having been opened for the selection of the assistant surgeon of the Hotel Dieu, he offered himself as a candidate for that office, and gave proofs of profound learning and of consummate skill in operative surgery. On this occasion, however, and on this alone, fortune did not smile upon him, for M. Marjolin, whose talents were not deemed superior to his, succeeded in obtaining the situation. Beclard was then appointed surgeon to the hospital of la Pitie, where, to the close of his life, he continued to show the advantages which a thorough knowledge of anatomy, joined to dexterity and great presence of mind, confers on the operator. Finally, in 1818, he was elected by the unanimous votes of his preceptors, and according to the wishes of all the pupils, to the chair of anatomy in the Faculty of Medicine of Paris.

After attaining this important station, Beclard appears to have devoted his whole time, and his whole soul to such a continued series of laborious studies, connected with his office of a teacher, as caused his lectures to be crowded with students, and eventually shortened his existence. Few men appear to have been more devoted to public duty and more ardent in the pursuit of science. As a lecturer, he was clear and precise. His conception was rapid and vigorous—his memory retentive—his judgment correct; and if his style was unadorned, the deficiency was compensated by the agreeableness of his elocution.

His chief published works are, a memoir sur les Acéphales; a memoir of considerable length, sur les Blessures des Vaisseaux, inserted among those of the society of Emulation of Paris; a memoir on osteology, the fruit of much observation and research; a thesis on embryology, published in the name of his brother; numerous experiments on local affections of the nerves, commenced in 1822, and lately published in a thesis by Mr. Descot; and a work on general anatomy, for the use of students. He was the author of most of the articles on anatomy contained in the Nouveau Dictionnaire de Médicine; as well as of several papers contained in the Bulletins de la Societé d'Emulation. He also published an appendix to Bichat's Anatomie Générale. Assited by M. Jules Cloquet, he translated Mr. Lawrence's work on Hernia; and in conjunction with the same author, commenced a series of anatomical plates, an undertaking, however, which his many occupations did not permit him to continue.

TO SUBSCRIBERS.

The Editorial Department of this Journal will, in future, be conducted by Dr. Speir. It is proposed, under the head of the Quarterly History, instead of stating detached Cases and Observations, to give the information they contain in such a form as to present a digested view of the progress of each branch of Medical Science. Arrangements are also made for receiving, from the celebrated Schools on the Continent, the earliest information of all that is novel or interesting in Medicine, and for improving generally the Foreign Department.

From the attention of several of the Gentlemen who co-operate with us being turned particularly to the principles and operations of Surgery, these will occupy a more prominent part in our pages than hitherto; and from the high professional character of our coadjutors, we anticipate, will form a valuable feature of the work.

By avoiding every thing trivial and diffuse, and aiming at conciseness of expression, and condensation of matter, it is hoped this Journal will exhibit a comprehensive view of the Medical Intelligence of the day in a condensed form, adapted to the perusal of men actively engaged in professional duties.

An important addition has been made to the list of Contributors and Coadjutors, by whom no exertion will be spared to add to the intrinsic value of the work, and draw towards it the warm support of its Readers.

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BOOKS RECEIVED FOR REVIEW,

DURING THE LAST QUARTER.

[N. B. Only those Books sent gratis and free of expense, can be entered on this List.]

A Comparative View of the more intimate nature of Fever, deduced from Physiological Analysis, and illustrated by Critical Remarks and Practical Observations, by James Black, M.D. &c. 8vo. pp. 118.

A Lecture on the Uses of Anatomy and Physiology in various

branches of knowledge, delivered on Monday the 1st of November, 1824, by James Macartney, M.D. &c. &c. Professor of Anatomy and Surgery, in the University of Dublin, &c. 8vo. pp. 38.

A Treatise on a Modified Application of Moxa, in the Treatment of stiff and contracted Joints; and also in Chronic Rheumatism, Rheumatic Gout, Lumbago, Sciatica, Indolent Tumours, &c. &c. &c. illustrated by Cases and Plates; with Observations on the different Remedies hitherto employed in the Treatment of Diseased Joints; and an Investigation into the nature, causes, and treatment of Spinal Diseases, 2d Edition, by James Boyle, Esq. Surgeon of the Middlesex Infirmary, &c. &c. 8vo. pp. 219.

Principles of Medical Science and Practice, Part 2. Vol. 2.—Pathology—by Hardwicke Shute, M.D. Physician to the General Infirmary, and to the County and City Lunatic Asylum, Gloucester, 8vo. p.p. 604.

An Enquiry concerning that disturbed state of the Vital Functions usually denominated Constitutional Irritation, by Benjamin Travers, F.R.S. 8vo. pp. 556.

Principles of Dental Surgery, exhibiting a new Method of treating the Diseases of the Teeth and Gums, especially calculated to increase their health and beauty, accompanied by a general view of the present state of Dental Surgery, with occasional references to the most prevalent abuses of the Art, by Leonard Koecker, Surgeon Dentist, Doctor in Medicine, &c. 8vo. pp. 445.

A Short Enquiry into the Principal Causes of the unsuccessful termination of Extraction by the Cornea, with the view of shewing the superiority of Dr. F. Iäger's double knife over the single knives of Wenzel and Beer. By Charles Loudon, Esq. Surgeon. London, 1826, with an Engraving.

The Edinburgh Journal of Medical Science, No. 3 and 4, *in Exchange.*

North American Medical and Surgical Journal, &c. July 1826, *in Exchange.*

American Medical Review and Journal, &c. July 1826, *in Exchange.*

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Art. I.—*On the Anatomy of the Eye.* By Dr. Salomon, Adjunct Professor at the Imperial Med. Chirurg. Academy of St. Petersburgh. *(Graefe und V. Walther's Journal, 7 B. 3 Heft.)*

The eye is the organ of vision, by means of which we perceive light, and the qualities of those bodies which it serves to distinguish. This perception, which constitutes vision, must be discriminated from the sensation of light without consciousness; for the inferior animals which possess neither eyes nor even a cerebral system, perceive light, in so far as it acts upon the system of vegetative life, but are deprived of all consciousness of the sensation. In them, as in plants, every part of the body is susceptible to the impressions of light; whilst, on the contrary, the individual function of vision, or the power of perceiving light by means of a distinct organ, disappears, in accordance with the general law which regulates the evolution of organs and their functions, both in the animal and vegetative spheres of life, viz. that the number of organs and systems of organs diminish in proportion to the inferiority of the grade of organization in which the individual is included; the phenomena of life becoming more simple in the lowest animals, and approximating to that of plants.

At the same time that a progressive series of this kind is discernible in the general organization, the structure of each individual organ is also the subject of a similar gradation; the complicity of the structure of the organs individually increasing

with the advancement in the grade of the general organization of the individual, and *vice versâ*. But, as the different systems and organs in the series of animals are not uniformly evolved according to any general law, we find occasionally that certain systems and organs attain a higher degree of development, in animals comparatively inferior, than in others which, by a more complete evolution of the most important systems and organs, claim a higher rank in the general series of animals. Thus, for instance, the organization of the eye is more complicated in birds, than in mammalia: the *membrana nictitans* of the bird's eye in the human, is but a rudiment under the form of a semilunar fold; the pecten is wholly wanting in the eye of mammalia. Birds, therefore, assume a higher grade of organization than mammalia, with relation to the more complicated structure of the eye, combined with a more perfect development of the irritable system.

The parts composing the eye are divided into: 1. The essential parts, or the eye itself: 2. Those less essential, the appendages.

A similar division may again be made of the essential parts themselves; inasmuch as they are more or less indispensible to vision, when we compare them in the different classes of animals.

The eye in man and the more perfectly organized animals, consists of different membranes inclosing the humours: 1. The external membrane, its anterior part being called cornea, and the posterior sclerotica; 2. The middle membrane, the choroid and iris; 3. The internal membrane or retina.

The parts appended to the membranes are: 1. The ciliary processes: 2. The ciliary circle: 3. The tendinous ring (*annulus tendinosus* Doellingeri): 4. The *zonula ciliaris*.

The humours are the aqueous, crystalline, and vitreous.

In the eye of man as well as of other mammalia, all the above-mentioned parts exist; in birds, the pecten and the bony circle of the sclerotica are superadded: the eye of amphibia is intermediate between that of birds and of fishes. The eye of the fish is more simple; it has no ciliary processes (except in the shark); the iris is incapable of motion and closely resembles the choroid. In the Mollusca, and particularly the cephalopodous order, the eye is very similar to that of fishes; the cornea and conjunctiva are not separate, but form a single membrane *; the iris is small and scarcely distinguishable from

* Kieser considers this membrane as the conjunctiva, by asserting "that the cornea is found in red-blooded animals only." Meckel's Translation of Cuvier's Comparative Anatomy, Vol. ii. p. 2.

the choroid; the ciliary processes embrace the spherical lens; the aqueous supplies the place of the vitreous humour; the anterior chamber is very small. In the acephalous Mollusca, the organ of vision is altogether wanting *.

The structure of the eye in insects is more simple, if we except the compound cornea or conjunctiva found in several of them; the eye is formed of a transparent membrane analogous to the cornea and conjunctiva; its posterior surface is covered with black pigment, and in the middle may be distinguished white filaments comparable to the choroid and retina; the sclerotica, iris, ciliary processes and humours of the eye are wanting. In the crustacea the structure of the eye is similar to that of insects. Some authors admit the existence of eyes in the class vermes; whilst others suppose that the parts representing them are merely nervous papillæ †; these papillæ probably present the most simple structure of the eye, which in them is reduced to a retina alone. In zoophytes no traces of eyes can be detected.

According to the observations of Wrisberg, Blumenbach, Sœmmering, Kieser, and Autenrieth, the development of the eye in the human embryo is the same as in the series of animals; the black pigment, choroid, and retina, being the first parts that can be distinguished, whilst the iris, cornea, sclerotica, and the humours appear at a later period. But little, however, is yet known with regard to the time and order in which the membranes and humours of the human eye are developed.

From this comparison we may conclude that the humours of the eye possess a lower rank in its organization than the membranes; and that with regard to the latter, a gradation exists, in so far as the more essential parts of the organs, in general, are earlier evolved in the embryo, and in the animal series than the less essential ones superadded to them.

The human eye is of a round, nearly spherical, form, and consists of two segments, of which the posterior (sclerotica) is larger than the anterior (cornea). The line corresponding to the axis of the eye is to its transverse diameter as 137 to 136; in all other animals the difference is greater, and consequently, the human eye approaches most closely to the spherical shape.

The eyes in man are also nearest to the median line, (the eyes of apes excepted,) and are surrounded in the orbits by muscles

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* Cuvier Règne Animal, Paris, 1817, T. 2. p. 334.

† Troxler *Versuche in d. organischen Physik*, S. 132.

vessels, nerves, and a considerable quantity of cellular tissue and fat.

The difference in the size of the eyes is but inconsiderable in the human race; the apparent prominence or depression of the eye, depends either on the greater width of the fissure between the eyelids, or on the diminution in the size of the orbit produced by the extraordinary development of the anterior and lower part of the brain *. The size of the eye varies but little in relation to age or sex. The colour of the eye is determined by that of the iris. The greatest difference in this respect is that which exists between the eye of the negro and the albino †. In the dark eye the vascular, and in the light one the nervous system predominates. The dark eye, when compared with the light one, has a firmer and thicker cornea; the ciliary ligament is firmer and of a darker colour; the ciliary zone and processes are more perfectly developed; the black pigment covers the choroid in greater quantity, and can be raised in a circular form from the uvea and ciliary ligament; the vessels of the eye are more easily perceptible; the pupil is generally larger, and the motion of the iris not so active; the dark eye is less susceptible to the stimulus of light, but more readily becomes weak in old age. In the retina, there is not any perceptible difference; the ciliary nerves are more perfectly developed in the light eye. In general, dark eyes are *cæteris paribus* more liable to chronic disease, as chronic inflammation and amaurosis; and light eyes to acute inflammations, cataracts, spasmodic affection of the eyelids, &c.

THE MEMBRANES.

1. *The Conjunctiva* is a muco-serous membrane, formed by a prolongation of the common integuments, and continued over the inner surface of the eyelids, and anterior surface of the eye. The conjunctiva bulbi is connected with the subjacent sclerotica by loose, cellular substance, and is closely attached to the cornea, the firmness of the connexion increasing from the circumference to the centre.

The continuation of the conjunctiva over the cornea is denied by some modern anatomists ‡, though in my opinion without sufficient grounds; for, 1st, this continuation may be de-

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* Gall *et* Spurzheim, *Recherches sur le Système Nerveux, &c.* Paris, 1819, Vol. 2.

† Soemmering, *Icones oculi humani.* Francof. 1801, and Blumenbach *de oculis Leucæthiopium et motu iridis commentat.* Goetting, 1786.

‡ Ribes *Mémoires de la Societé Medicale d'emulation.* Paris, 1817. Meckel, *Handbuch der menslichen Anatomie.* B. 4. Halle, 1820.

tected by maceration; and 2d, the most satisfactory proofs of it are exhibited by the morbid changes of the eye, pterygium and pannus for instance, (opacity with enlargement of the vessels,) where the cornea, after the removal of this diseased state, occasionally appears transparent.

The arrangement of the vessels, as the worthy Soemmering has shewn, is villous, and very similar to the villous surface of the intestines when injected. The distribution of the vessels of the conjunctiva of the bulb is different; the vessels run in long branches from the circumference to the centre of the cornea, a fact which becomes very evident, when they are injected with red blood in an inflamed conjunctiva. In this respect the conjunctiva of the bulb presents some similarity to the serous membranes, in which the vessels are arranged in longitudinal branches.

The conjunctiva of the eyelids is a perfect mucous membrane, and consequently no adhesion can take place between it and the conjunctiva of the bulb, without a previous suppurative process; the suppurating surface pours out coagulating lymph, by means of which the adhesion is effected; such adhesions consequently cannot in any way prove that the conjunctiva is a serous membrane, as Schmidt supposed*.

The conjunctiva of the bulb is considered by V. Walther and Wardrop as a mucous, and by Beer and Schmidt, as a serous membrane; for my own part, I think it both mucous and serous, resembling the serous membranes in its transparency and the arrangement of its vessels, whilst it cannot altogether lose the character of a mucous membrane, in as much as it is a continuation of the skin. This opinion is also confirmed by pathological observations; for the inflamed conjunctiva bulbi is very much disposed to lymphatic exudations, in which way are formed opacities and superficial spots on the cornea, pterygium, and pannus; in this respect resembling the serous membranes. It corresponds also with mucous membranes, in as much as it secretes a puriform mucus in ophthalmo-blenorrhœa. It is worthy of remark, however, that the conjunctiva bulbi, is never primarily attacked by the blenorrhagic inflammation. I have seen many cases of the purulent or contagious ophthalmia, both in London and Petersburgh, but I do not recollect a single instance in which this destructive inflammation commenced in the conjunctiva of the bulb. We may conclude, that the conjunctiva of the eyelids presents all the characters of mucous membranes in a more

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* Schmidt u. Himly's *Ophthalmologische Bibliothek.* B. 3. St. 1. s. 18.

decided manner than the conjunctiva of the bulb, which forms the transition from mucous to serous membranes.

2. *The Sclerotica* is a fibrous membrane. Its thickness varies in different parts of the eye. It is thick at the entrance of the optic nerve into the bulb of the eye; anteriorly it becomes thinner where the tendons of the muscles of the eye are attached; and lastly, it becomes thicker again near the cornea, where, particularly in children, it may be easily separated into two lamellæ; the external lamella is longer than the internal, and in many animals is distinctly separated from it; the internal lamella has a circular depression for the reception of the tendinous ring *. The anterior part of the sclerotica is transparent, because the anterior chamber extends beyond that side of the circumference of the cornea.

The sclerotica is incorrectly considered by some anatomists as a prolongation of the dura mater, of the brain, or of the tendons of the muscles, for no immediate continuation of those parts can be detected.

3. *The Cornea* forms the anterior part of the bulb of the eye; the external surface is convex, and almost united with the conjunctiva; the internal surface is concave, and lined by the membrane of the aqueous humour.

Home considers the cornea as a continuation of the tendons of the muscles of the eye; this, however, cannot be demonstrated, and the texture of the cornea is altogether different from that of tendons. Bichât says:—"Je ne connais aucun tissue de l'economie animale, qui resemble au sien; elle a une existence propre sous ce rapport †." The cornea appears, however, to be intermediate between the serous and the fibrous membranes, resembling the former in its want of sensibility, its transparency, the arrangement of its vessels, and its pathological changes, having a peculiar tendency to become opaque when inflamed, or even to suppurate when the inflammation reaches to an unusual height. Like the fibrous membranes, (the pericardium, dura mater, ligaments of the joints, &c. for instance,) its internal surface is lined by a serous membrane. The lamellar structure of the cornea resembles that of the crystalline or of nail. It receives its vessels from the conjunctiva and sclerotica, for though they cannot be shewn by injections, the fact is sufficiently established by pathological observation.

The membrane of the aqueous humour lines the inner surface of the cornea, and belongs to the serous class, of which it

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* Doellinger *Illustratio ichnographica oculi humani*, Wirceburgi, 1817.
† Traité d'Anatomie descriptive T. 2. p. 434.

presents all the characters in regard to transparency, consistence, position, and continuation over the iris and choroid. It is distinguished by its greater firmness and transparency from the lamellæ of the cornea, from which it can be readily separated; it also remains transparent when immersed in alcohol, whilst the lamellæ of the cornea become opake. In several animals it may be easily distinguished without any previous preparation. This membrane forms the close connexion between the iris and the cornea; which is the cause that inflammation of the cornea supervenes so quickly in iritis, that many pathologists deny the existence of primary corneitis. This membrane unquestionably serves for the secretion of the aqueous humour.

4. *The Iris* is an irritable membrane forming a septum between the anterior and posterior chambers of the eye, and consisting of two serous lamellæ between which the ciliary nerves and vessels are distributed. The external or ciliary edge of the iris is connected with the sclerotica, by means of the tendinous ring, and with the cornea by the membrane of the aqueous humour which is continued to the iris; the inner or pupillary edge forms the pupil.

As to the continuation of the membrane of the aqueous humour over the iris, it is admitted by the most celebrated writers. Wardrop supposes that it is continued into the posterior chamber, and connected with the lens; this connexion, however, is not established. I have made several dissections with a view to ascertain the fact, but have never been able to perceive any such connexion. I have separated the membrane of the aqueous humour, together with the iris and choroid from the cornea and sclerotica; the union of these parts, however, in the human eye is too close to admit this separation. I have found, notwithstanding, that the membrane of the aqueous humour is continued on to the iris; for in front of the tendinous ring may be distinguished a smooth, transparent membrane, reflected from the cornea to the iris, and closely resembling the membrane of the aqueous humour, except that it is finer. This opinion is confirmed by comparative anatomy, in as much as the membrane of the aqueous humour can be separated, together with the iris and choroid, from the cornea and sclerotica in the eyes of several animals.

I have convinced myself by repeated anatomical examinations of the eye, that the membrane of the aqueous humour is continued not only over the anterior, but also over the posterior surface of the iris. After macerating the iris in water for some days, I could easily separate it into two lamellæ, of which the anterior

corresponded to the iris itself, and the posterior to the uvea; between them I found the ciliary nerves and vessels with connecting cellular membrane. I could not distinguish any tendinous or muscular fibres in the iris of the human eye; but in it, as well as in the eye of several other mammalia, after removing the black pigment, I found fibrous striæ commencing at the ciliary edge of the iris, stretching towards the pupil, firmly connected with the uvea, and having their origin from the ciliary processes. These fibrous striæ, already noticed by Haller, are not to be found in the eye of birds. I think it probable that these fibrous striæ influence the contraction of the iris.

A pigment is secreted between the lamellæ of the iris: I found it of very different colour, according as the iris was light or dark, whence I conclude that the colour of the iris is dependent on this pigment; in the human eye, however, and that of several animals it is not distinguishable, the uvea being covered by the black pigment.

Comparative anatomy proves that the iris consists of two lamellæ, for in the eye of birds, amphibia, and fishes, the uvea can be easily distinguished from the iris without any previous separation. The pupillary membrane also serves as a proof of the same fact, being formed by a continuation of the iris, and divisible into two lamellæ *.

These two lamellæ, which, together with the ciliary nerves and vessels, constitute the iris, belong to the class of serous membranes; this peculiarity of the iris is proved by physiological and pathological observations: 1st. Several organs endowed with vital expansibility and contractility, are surrounded by serous membranes, as the lungs, heart, intestines, &c.: 2d. Pathology informs us, that the iris is very much disposed to lymphatic exudations, whence iritis frequently ends in obliteration of the pupil, with anterior, posterior, total or partial adhesion. In syphilitic iritis these exudations form the condyloma of the iris first observed by Beer. Less frequently, and only from the highest degree of inflammation, abscesses form in the substance of the iris. In this respect iritis is analogous to the inflammations of serous membranes. 3d. When the pigment of the uvea and that of the iris (pigmentum interstitiale) are wanting, the iris is transparent, in that respect presenting a character distinctive of the serous texture. 4th. The anterior

* Cloquet *sur la membrane pupillaire*, Paris, 1816. "La membrane pupillaire est formée de deux feuillets membraneux adossés et contenant dans leur intervalle des vaisseux sanguins fort nombreux."

lamella of the iris is the immediate continuation of the membrane of the aqueous humour.

5. *The Choroid* in the human eye secretes the black pigment, and is composed of two lamellæ. 1st. The external lamella, or proper choroid, receives the ciliary nerves; and 2d, the internal lamella, or Ruyschiana, receives the ciliary vessels, the arrangement of which has been best described by Soemmering *; their distribution is also displayed by the pathological changes of the membrane, as I have found the ciliary veins extremely varicose at the same time that the tunica Ruyschiana was ossified.

The choroid can be divided with facility into two lamellæ, after the eye has macerated in water for some days. This separation exists naturally in the eye of the colymbus *stellatus*, the external lamella not being connected with the subjacent ciliary circle. Some pathological examinations of the human eye have proved to me that in the internal cancer of the eye, which commences in the tunica Ruyschiana, the choroid is separated by the morbid growth into two lamellæ †.

1. The external or venous lamella, the choroid properly so called, is a transparent, smooth, tough membrane, of which the external surface is unattached, whilst the internal, on the contrary, is closely connected with the subjacent internal lamella of the choroid. It is most perceptible in the anterior part of the eye, being so thin posteriorly as to resemble cellular tissue. Duverney described this as a peculiar serous membrane covering the choroid. The colour of the venous choroid, is anteriorly white or yellowish, from the ciliary ligament which lies beneath it; posteriorly it is coloured by the black pigment, and perforated by the vessels and nerves of the iris. This external lamella, which is firmly connected with the tendinous ring, joins the anterior lamella of the iris at an acute angle, and forms a firm, transparent, and tough membrane, which is continued on the inner surface of the cornea, dividing, about two lines from the tendinous ring, into two lamellæ; an interior or inner one, forming the iris, and an external or posterior forming the external lamella already described; consequently, the transparent membrane found in front of the tendinous ring, and which I consider as the membrane of the aqueous humour, is divided into two lamellæ which constitute the iris and the venous choroid; these two lamellæ differ from the membrane of the aqueous humour only in being finer or thinner.

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* *Loc. cit.* and *Abhandlung über das feinste Gefässnetz der Aderhaut*, 1818.

† Travers' *Synopsis of the Diseases of the Eye.* London, 1820, pl. 6. fig. 2.

2. The tunica Ruyschiana, the internal lamella or arterial choroid, is also transparent, tough, firmer than the external lamella, and forms a sac, inclosing the lens, vitreous humour, and retina; its external surface is connected with the venous choroid, whilst the internal is unattached.

Both lamellæ, with regard to their natural structure, and the morbid changes to which they are liable, certainly belong to the class of serous membranes: for after internal ophthalmia, the choroid is not unfrequently found thickened; or the internal lamella adherent to the subjacent retina, and the external to the sclerotica; the internal lamella is frequently found ossified (but not the external, because of the predominance of the venous system in it), pathological changes which are most common in the serous membranes.

The tunica Ruyschiana lies loosely over the retina without adhering to it, and at the base of the eye is perforated by the optic nerve, which is continued into the retina. In the posterior hemisphere of the human eye, the black pigment is found on the external surface of the tunica Ruyschiana; but anteriorly where the zonula ciliaris has its origin, it is secreted from the internal surface, and thereby communicates its colour to the zonula ciliaris beneath.

Anteriorly, the tunica Ruyschiana is continued into the uvea, which I believe to be an extension of it, having evidently observed their continuity after dividing the iris and choroid into two lamellæ, and removing the ciliary processes. In the eye of fishes, where the ciliary processes are wanting, and of some birds, the colymbus *stellatus* in particular, I have been able to discover the continuation of the uvea into the tunica Ruyschiana without any previous separation. This structure of the membranes of the eye in the inferior classes of animals is an indisputable proof that it must be similar in the superior ones.

The ciliary body (corpus ciliare,) is the interval of the tunica Ruyschiana between the serrated edge of the retina, (or the origin of the zonula, ciliaris according to Rudolphi and Doellinger,) and the uvea. The posterior edge of the ciliary body is serrated, corresponding to the similar edge of the retina; its inner surface is covered by the black pigment. On the inner side of the eye the ciliary body is narrower, because the retina here extends more forwards than on the outside, the optic nerve entering the ball of the eye rather on its inner side. According to Beer, the ciliary body in the human eye may be divided into two parts; 1st, a posterior part, not folded, and formed merely by the tunica Ruyschiana; 2d, the folded part (pars plicata), to which the ciliary processes are attached: the posterior part

is connected to the zonula ciliaris by cellular tissue; the anterior plicated portion, on the contrary, is loose, and not attached either to the zonula ciliaris or the anterior capsule. This division of the ciliary body is important to the operator; for in operations through the sclerotica the posterior portion must be perforated, and the needle pass through the zonula ciliaris into the substance of the vitreous humour. In reclination also, through the sclerotica or cornea, the connexion between the zonula ciliaris and the anterior capsule must be sufficiently destroyed in order to prevent the re-ascent of the lens; for though the contraction of the muscles of the eye may favour this re-ascent, I have no doubt that in many instances the zonula ciliaris is the cause of this occurrence, by offering a considerable resistance during the operation.

The ciliary processes appear as folds or striæ closely connected with the anterior part of the ciliary body, of which they form the plicated portion. They commence in the angle where the uvea is continuous with the tunica Ruyschiana; they become thinner posteriorly, and extend to the connexion of the zonula ciliaris with the ciliary body; their number is from seventy to seventy-five, and greatest in the dark-coloured eye; some of the plicæ are longer, some shorter, and not unfrequently two of them have a common origin. Smaller striæ also arise at the origin of the ciliary processes, being firmly connected to the uvea and extending to the pupil.

The ciliary processes at their origin are of considerable thickness; they surround the circumference of the posterior chamber and form its boundary; they are not connected with the subjacent crystalline. There is not any unoccupied space between them and the lens, so that the depression of the lens into the lower part of the posterior chamber, proposed by some authors, could not be accomplished without considerable injury to the ciliary body and the iris.

In the human eye the ciliary processes are not covered by any black pigment, but by a loose and very vascular cellular tissue, which is probably the secretory apparatus of the aqueous humour of the posterior chamber.

As to their structure, some authors consider it as glandular. others nervous or muscular, and many as a termination of the external choroid, or a duplicature of the tunica Ruyschiana, I have never discovered any connexion between them and the external lamella of the choroid, nor can I agree with those who consider them as a duplicature of the tunica Ruyschiana; for, 1st, in the human eye, they are not covered by any black pigment; 2d, they can be completely separated from the tunica

Ruyschiana without destroying its continuity; 3d, the texture of the ciliary processes is totally distinct from that of the Ruyschian tunic, being fibrous, elastic, of a white colour, and apparently between a tendinous and a ligamentous structure; 4th, we find from comparative anatomy that in most fishes, and some amphibia, the ciliary processes are wanting, although the choroid exists; 5th, the ciliary processes are very different from the pecten of the eye of birds, which is actually formed by a duplicature of the tunica Ruyschiana. From these facts we may infer that the ciliary processes are attached to, and not formed by the Ruyschian tunic.

Both in structure and function, the ciliary processes are among the least completely known parts of the eye. Haller supposed that they served to retain the lens in its place; others considered them as the secretory apparatus of the aqueous humour; others again attributed to them a power of contraction, by which they were enabled to diminish the convexity of the lens in looking at near objects, &c. I will not increase the number of these hypotheses, but confess that I am unacquainted with their function, although I am inclined to believe that they, together with the zonula ciliaris, probably have some influence over the lens and iris.

Here I must remark that the choroid presents great differences in the series of animals; the pigment is often of various colours, and not unfrequently covers the external and internal surfaces of the Ruyschian tunic. In mammalia, the ciliary processes include almost the whole of the ciliary body, are firmly connected with the zonula ciliaris, and covered by black pigment. The pecten is added in the eye of birds. In amphibia and fishes, the iris is immoveable and analogous in texture to the choroid. The gland of the choroid (glandula choroidalis,) is found in the eye of fishes, the genera squalus and raja excepted.

6. *The Retina* is the third membrane, which belongs to the posterior hemisphere of the eye. It is the continuation of the optic nerve, which projects in a nipple-like form through the lamina cribrosa of the sclerotica, and terminates in a white, soft, and thin membranous expansion. The retina is firmly connected with the vitreous body at the entrance of the optic nerve, and in the whole circumference of its termination anteriorly, by means of dense cellular tissue; its external surface is unattached. It consists of three lamellæ; 1st, the external or serous, described by Jacobs*; I have found this membrane in

* Jacobs' *newly discovered Membrane of the Eye.* Thomson's *Annals of Philosophy.* July 1818.

the eyes of animals; is it not the arachnoid of the brain continued into the eye with the optic nerve? 2d, the middle lamella or nervous pulp; 3d, the internal, or expansion of the central artery.

The retina extends farther forwards on the inner, than on the outer side of the eye, because the optic nerve perforates the sclerotica on the inner side of the axis of the eye. This perforation of the sclerotica by the optic nerves on the inner side is easily explicable where we consider the parallel position of both eyes, and the oblique direction of the orbits inwards and backwards.

According to Sœmmering, Beer and Meckel, the retina terminates at the point where the ciliary body commences, with a dentated and thickened edge. Haller, Monro, and others, on the contrary, supposed that the retina was prolonged to the crystalline; and Doellinger does not consider the dentated edge of the retina as its termination, but believes that it is continued as a thin membrane beneath the zonula ciliaris as far as the canal of Petit. I have made and examined many preparations to decide the question; from them I conclude that the pulpy substance of the retina terminates with its dentated edge; and after removing the zonula ciliaris, I have found cellular substance beneath it extending to the canal of Petit, though, whether it be the continuation of the internal lamella of the retina I leave others to decide.

I pass over the folds of the retina with the yellow spot and central aperture in it, referring to the excellent remarks of Sœmmering, Home, Reil, Wenzel, &c.

Besides the ciliary processes, there are also attached to the membranes of the eye; 1st, the ciliary ligament; 2d, the tendinous ring of Doellinger; and 3d, the zonula ciliaris.

1. The ciliary ligament is a loose cellular tissue, which in the light eye is of a white, and in the dark, of a grey colour, lying anteriorly between the two lamellæ of the choroid, its position corresponding to the attachment of the ciliary processes. This ligament has a conical form, with its base turned towards the iris, and its point directed backwards. Some authors consider it as cellular tissue, and others as a glandular body. It receives the vessels and nerves which are distributed to the iris. The canal of Fontana, which is found in the eye of several mammalia, is wanting in man. In operations through the sclerotica, the injury of the ciliary processes and ligament is in itself of little moment, but must be avoided from the danger of wounding the iris.

2. The tendinous ring (annulus tendinosus of Doellinger,) is

a fibrous ring of a white colour, firmly connected externally with the groove between the sclerotica and cornea; its internal surface is closely adherent to the external lamella of the choroid, which, together with the anterior lamella of the iris, forms a firm transparent membrane in front of the ring.

3. The zonula ciliaris considered by Zinn, as the anterior lamella of the hyaloid membrane; Camper was the first to contradict this opinion, asserting that its structure was muscular. Rudolphi *(anatomisch-physiolog. untersuchungen.* B. 1.) and Doellinger (ueber-das strahlenblattchen. 1818.) followed up this idea, and showed that the zonula ciliaris could not be considered as the continuation of the membrane of the vitreous humour; because, 1st, the latter is so thin that it cannot possibly be divided into two lamellæ; 2d, the structure of the zonula ciliaris differs from that of the hyaloid membrane, which is not fibrous; 3d, the hyaloid membrane is not thinner in the cup-shaped cavity of the vitreous body than in any other part; 4th, the zonula ciliaris can be separated from the vitreous body without injuring it, and remains connected with the dentated edge of the retina; 5th, the vessels of the capsule of the lens and of the zonula ciliaris can be injected, whilst those of the hyaloid membrane cannot be discovered.

The structure of the zonula ciliaris is partly serous, partly fibrous; the serous part is transparent, tough and smooth, receives the ciliary processes, and can be expanded like a bladder by impelling air into it; the fibrous portions or fasciculi divide the zonula into several parts. Ribes (loc. citat.) calls the fibrous portion of the zonula ciliaris—"ciliary processes of the hyaloid membrane;" and in fact its structure appears analogous to that of the ciliary processes.

The zonula ciliaris has its origin from the dentated extremity of the retina, so that its thin lamellæ, which connect the fibrous fasciculi, are received into the sinuosities of the dentated extremity of the retina, the zonula being closely united at this point to the retina, and subjacent hyaloid membrane. Anteriorly the zonula becomes thinner, loses its fibrous texture, and is identified with the anterior capsule of the lens, which is thus rendered thicker than the posterior. The external surface of the zonula is stained by the black pigment and connected with the ciliary body by cellular tissue. It is about three lines broad, and, like the ciliary body, broader on the inner, than the outer side of the eye. The inner surface is connected with the subjacent cellular tissue which extends to the canal of Petit.

The canal of Petit is the triangular space which surrounds the crystalline; externally it is bounded by the zonula ciliaris,

anteriorly by the capsule of the lens, and posteriorly by the hyaloid membrane; so that it forms a triangle, the basis of which is turned outwards or towards the choroid, and the apex, (which is formed by the union of the posterior capsule with the hyaloid membrane,) inwards. The use of the canal is unknown.

Ribes (loc. citat.) denies the vascularity of the zonula ciliaris, of the capsule of the lens, and the vitreous body, and has described certain ducts which convey the vitreous humour into the chambers of the eye, and the aqueous humour into the vitreous. I have never seen these ducts, which I consider as unnecessary and hypothetical, not having any doubts as to the vascularity of these parts.

From the close connexion of the zonula ciliaris with the anterior capsule of the lens, we may suppose that it retains the lens in situ, whence it might be called the ligament of the lens. This view is also confirmed by pathological observations; for after injuries of the eye, it occasionally happens that the zonula ciliaris is detached from the lens, and in such cases the latter becomes moveable and opaque; of this kind are the cataracta tremula et natatilis traumatica. The opacity of the lens in such instances proves also, that its connexion with the zonula is vital, being the means by which its nutrition is effected. It is not sufficiently ascertained whether the fibrous fasciculi of the zonula act upon the lens by their contractility or elasticity. Doellinger (loc. citat.) says that the zonula ciliaris performs the part of an erector to the iris.

From the above description of the eye, it will be seen that very various textures enter into its composition; the retina, the ciliary nerves and vessels constitute its most essential parts, a fact which is proved both by embryology and comparative anatomy. The nervous and vascular systems are separated by the serous membranes, *i. e.* the membrane of the aqueous humour, which is continued into the interior of the eye, as iris, uvea and choroid, and the serous membrane of the retina; at the same time, however, they are connected by the proximity of the membranes. The membrane of the aqueous humour, like other serous membranes, forms a closed sac, in as much as it is continued into the iris and choroid.

The humours, like the membranes of the eye, most closely resemble the serous textures, facilitating the transmission of the rays of light, in so far as they are distinguished from all others by their greater transparency. The nervous and vascular textures, with the internal serous membranes and humours, are inclosed within the fibrous sclerotica and cornea, (the latter of which is

intermediate between the fibrous and serous textures,) and consequently, in the eye, as in the other parts of the human body, we find the fibrous conjoined with the serous structure.

ART. II.—*A Treatise on Diet, with a view to establish, on Practical Grounds, a System of Rules for the Prevention and Cure of the Diseases incident to a disordered state of the Digestive Functions.* By I. A. Paris, M.D. F.R.S. London, 1826. pp. 307.

A Treatise on Diet forms such a natural supplement to the prevalent fashion of referring all complaints to the effect of Indigestion and bilious diseases, that we think Dr. Paris need not have given himself much trouble in assigning a cause for again making his appearance before the public. He would probably have done as well at least, in leaving us to guess that in his choice of a subject on which to employ his ingenuity in disposing his collectanea from the researches of others, he was guided by a prudent wish to accommodate himself to the state of public feeling, as in asserting that he relies for an excuse principally on his exertions in correcting the errors into which preceding writers have been betrayed. For ourselves, at least, we see but little cause to admit the validity of the latter plea, and though ready to bear testimony to the general information, with which the work abounds, and the dexterity and piquance with which it is manufactured, plainly profess ourselves opposed to its claims in point of novelty. Were it not that the author has advanced such claims, we are not sure that the want of novelty, or rather originality, might not have been considered by us as advantageous in so far as the chances of error to the unlearned reader are thereby diminished.

We know not whether the work is intended, (ex professo) for the perusal of the public; whether it be or not is immaterial, for the style and the familiar manner of treating all parts of the subject, simple or abstruse, can hardly fail to render it popular, and place it in the hands of half the old women and hypochondriacs in the kingdom. It is in this light only we think it important that the profession should be acquainted with its contents, for were we to look merely to its intrinsic

merits, we should have hesitated at permitting it to occupy a space in our pages, that might be more usefully employed.

The Treatise consists of three parts: 1st, the Anatomy and Physiology of the Digestive Organs; 2d, the Materia Alimentaria; 3d, Indigestion. The first of these we shall not hesitate to pass over in spite of all the allurements with which Dr. Paris endeavours to tempt us to listen to a "twice-told tale."

Materia Alimentaria.—After shortly deciding that, though man is omnivorous, his anatomical characters indicate him as destined to subsist on a diet in which vegetable matter predominates, Dr. Paris proceeds to investigate the value of the well-known experiments, by which Magendie sought to prove that the presence of azote was essential in all aliments to the support of life. It is perhaps a sufficient objection to these experiments that they are inconclusive, inasmuch as it has not been shown that there is any evident connexion between the quantity of azote in various kinds of aliment and their relative nutritive qualities. According to Dr. Paris, they prove only that an animal cannot be supported by highly-concentrated aliment, though why this should be so no reason is assigned, nor is any proof of the fact offered from analogous cases. We are told indeed, that animals fed on concentrated aliment are liable to various diseases; though, as far as we are able to judge, the symptoms in such instances are those of plethora and repletion, and not those of exhaustion and emaciation, which Dr. Paris has himself quoted from Magendie in the previous pages.

Dr. Paris arranges aliments, &c. in the following manner:—

"1. Fibrinous Aliments. Comprehending the flesh and blood of various animals, especially such as have arrived at puberty; venison, beef, mutton, hare.

"2. Albuminous: Eggs; certain animal matter.

"3. Gelatinous Aliments. The flesh of young animals; veal, chickens, calf's foot, certain fishes.

"4. Fatty and Oily Aliments. Animal fats, oils, and butter, cocoa, &c.; ducks, pork, geese, eels, &c.

"5. Caseous Aliments. The different kinds of milk, cheese, &c.

"6. Farinaceous Aliments. Wheat, barley, oats, rice, rye, potato; sago, arrow root, &c.

"7. Mucilaginous Aliments. Carrots, turnips, asparagus, cabbage, &c.

"8. Sweet Aliments. The different kinds of sugar, figs, dates, &c.; carrots.

"9. Acidulous Aliments. Oranges, apples, and other acescent fruits.

"To these we may add CONDIMENTS; such as salt, the varieties of pepper, mustard, horse radish, vinegar, &c

"In classing the different species of potations, we may, in like manner, be governed by the chemical composition which distinguishes them. They may be arranged under four divisions, viz.

"1. WATER. Spring, river, well water, &c.

"2. THE JUICES AND INFUSIONS OF VEGETABLES AND ANIMALS. Whey tea, coffee, &c.

"3. FERMENTED LIQUORS. Wine, beer, &c.

"4. The ALCOHOLIC LIQUORS, OR SPIRITS. Alcohol, brandy, rum, &c."

An important caution is suggested as to the error of regarding "the terms nutritive and digestible as synonimous and convertible."

"A substance may be highly nutritive, and yet be digested with difficulty; that is to say, it may require all the powers of the digestive organs to convert it into chyle, and yet, when so converted, it may afford a principle of highly restorative energy; this is the case with some of the fatty and oily aliments. On the contrary, there are substances which apparently pass out of the stomach with sufficient readiness, which afford but little comparative support to the body."—p. 102.

The digestibility of food is influenced by many circumstances, in addition to its mere chemical composition: among the principal are its texture and coherence.

"The texture of animal food is greatly influenced by the age, sex, habits, condition, diet, and description of death of the animal which furnishes it. In proportion, generally, to the age, its flesh is coarser and more firm in texture, as every one must have noticed in eating birds. If the flesh of mutton and lamb, beef, and veal, are compared, they will be found of a different texture, the too young meats are of a more stringy, indivisible nature than the others, which makes them harder of digestion. It has been also justly observed, that young animals differ from old ones in the distribution of the fat, which in the latter is chiefly collected in masses or layers, external to the muscles; whereas, in the former, it is more interspersed among the muscular fibres, giving the flesh a marbled appearance, which is always a desirable property of butcher's meat. The texture of food will also vary according to the wild or domesticated state of the animal; that of the former is more dense, although highly nutritive. The sex also modifies the quality of the flesh, that of the female being always more delicate and finer-grained than that of the entire male, whose fibres are denser; the influence of the genital organs upon this occasion is very extraordinary; it is generally believed, that the flavour of the female is even improved by removing the ovaries, or *spaying* them, as it is called. Every day the testes are permitted to remain, even though totally inactive with regard to their proper function, injures the delicacy of the veal of the bull calf; and an animal which is not castrated until

after puberty always retains much of the coarseness of the entire male. The mode of killing an animal has been considered, from the remotest ages, as capable of affecting the quality of its meat. The flesh of hunted animals is characterised by peculiar tenderness; the same effect is produced by any lingering death. This fact probably explains the policy of those municipal laws, which ordained that no butcher should offer or expose any bull-beef for sale, unless it had previously been baited; and it is upon the same principle only, that the quality of pig's flesh could be improved by the horrible cruelty of whipping them to death, said to be practised by the Germans. The action of vinegar, administered to an animal some hours before killing it, is also known to be capable of rendering its flesh less tough. It is a common practice in the country to give a spoonful of this acid to poultry, when they are intended for the immediate service of the table.

"Nothing, however, tends more effectually to ameliorate the rigidity of the animal fibre, than incipient putrefaction. The length of time that meat ought to be kept after it is killed will necessarily depend upon its tendency to undergo the putrid fermentation, and the prevalence of those circumstances which are inclined to favour it."

Independent of their intrinsic qualities, aliments, both animal and vegetable, are materially modified by the changes which they undergo during the various processes of cookery. In no instance, whether we look to convenience or to positive utility is the superiority of the civilized to the savage state more decidedly marked. For this chemistry of the kitchen, our readers may be anxious to hear Dr. Paris speak for himself:—

"Boiling.—By this operation, the principles not properly soluble are rendered softer, more pulpy, and consequently, easier of digestion; but the meat, at the same time, is deprived of some of its nutritive properties by the removal of a portion of its soluble constituents; the albumen and gelatine are also acted upon: the former being solidified, and the latter converted into a gelatinous substance. If, therefore, our meat be boiled too long or too fast, we shall obtain, where the albumen predominates, as in beef, a hard and indigestible mass, like an overboiled egg; or, where the gelatine predominates, as in young meats, such as veal, a gelatinous substance equally injurious to the digestive organs. Young and viscid food, therefore, as veal, chickens, &c., are more wholesome when roasted than when boiled, and are easier digested. Dr. Prout has very justly remarked, that the boiling temperature is too high for a great many of the processes of cooking, and that a lower temperature and a greater time, or a *species of infusion*, are better adapted for most of them. This is notorious with substances intended to be *stewed*, which, even in cookery books, are directed to be *boiled slowly* (that is, not at all), and for a considerable time. The ignorance and prejudice existing on these points is very great, and combated with difficulty; yet, when we take into account their importance, and how intimately they are connected with health, they will be

found to deserve no small share of our attention *. The loss occasioned by boiling, partly depends upon the melting of the fat, but chiefly from the solution of the gelatine and osmazome: mutton generally loses about one-fifth, and beef about one-fourth, of its original weight. Boiling is particularly applicable to vegetables, rendering them more soluble in the stomach, and depriving them of a considerable quantity of *air*, so injurious to weak stomachs. But, even in this case, the operation may be carried to an injurious extent; thus, potatoes are frequently boiled to the state of a dry, insipid powder, instead of being preserved in that state in which the parts of which they are composed, are rendered soft and gelatinous, so as to retain their shape, yet be very easily separated. On the other hand, the cabbage tribe, and carrots, are frequently not boiled long enough, in which state they are highly indigestible. In conducting this process, it is necessary to pay some attention to the quality of the water employed; thus, mutton boiled in hard water, is more tender and juicy than when soft water is used; while vegetables, on the contrary, are rendered harder and less digestible when boiled in hard water.

"Roasting.—By this process the fibrine is corrugated, the albumen coagulated, the fat liquefied, and the water evaporated. As the operation proceeds, the surface becomes first brown, and then scorched; and the tendinous parts are rendered softer and gluey. Care should always be taken that the meat should not be over-done, nor ought it to be under-dressed; for although in such a state it may contain more nutriment, yet it will be less digestible, on account of the density of its texture. This fact has been satisfactorily proved by the experiments of Spallanzani; and Mr. Hunter observes, that "boiled and roasted, and even putrid meat, is easier of digestion than raw." Animal matter loses more by roasting than by boiling: it has been stated above, that by this latter process, mutton loses one-fifth, and beef one-fourth; but by roasting, these meats lose about one-third of their weight. In roasting, the loss arises from the melting out of the fat, and the evaporating of the water; but the nutritious matter remains condensed in the cooked solid; whereas, in boiling, the gelatine is partly abstracted. Roast are, therefore, more nutritive than boiled meats.

"Frying.—This process is, perhaps, the most objectionable of all the culinary operations. The heat is applied through the medium of boiling oil or fat, which is rendered empyreumatic, and therefore extremely liable to disagree with the stomach.

"Broiling.—By this operation, the sudden browning or hardening of the surface prevents the evaporation of the juices of the meat, which imparts a peculiar tenderness to it. It is the form selected, as the most eligible by those who seek to invigorate themselves by the art of training.

"Baking.—The peculiarity of this process depends upon the sub-

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* Hence it is that beef tea and mutton tea are much more calculated for invalids, than the broths of these meats.

stance being heated in a confined space, which does not permit the escape of the fumes arising from it; the meat, therefore, from the retention of its juices, is rendered more sapid and tender. But baked meats are not so easily digested, on account of the greater retention of their oils, which are, moreover, in an empyreumatic state. Such dishes, accordingly, require the stimulus of various condiments to increase the digestive powers of the stomach."

In our progress through the work—we cannot help remarking, that the Doctor has acquired a very great facility of thinking and writing exactly like some who have thought and wrote before him. This is a very unfortunate talent in an author—for as he is not to be supposed to know the particular persons whom his style may happen to resemble, uncharitable people might suppose he had absolutely copied them. One of these resemblances, that of Sir John Sinclair, is so very like, that we shall present the portrait of each, as painters do, in juxta position.

Dr. PARIS.

"The liquor called ale was originally made of barley, malt, and yeast alone. We are told by one of the oldest English writers on medical subjects (Andrew Boorde), that those who put in any other ingredient, "sophisticated the labour." "It is," he says, "the natural drink of an Englishman; but beer, on the other hand, which is made of malt, hops, and water, is the natural drink of a Dutchman, and of late is much used in England, to the great detriment of many Englishmen." There existed for a long time, a strong prejudice against hops, which were considered as "pernicious weeds;" but it is now generally admitted, that they constitute the most valuable ingredient in malt liquors. Independent of the flavour and tonic virtues which they communicate, they precipitate, by means of their astringent principle, the vegetable mucilage, and thus remove from the beer the active principle of its fermentation:—without hops, therefore, we must

Sir. J. SINCLAIR.

"The liquor called ale was originally made in England of malt, barley, and yeast, alone. We are told by one of the oldest English writers on medical subjects, (Andrew Boorde,) that those who put in any other ingredient, sophisticated the labour. It should never be drank under five days old. "It is," he says, "the natural drink of an Englishman; but beer, on the other hand, which is made of malt, hops, and water, is the natural drink of a Dutchman, and of late is much used in England, to the great detriment of many Englishmen."

"There was formerly a strong prejudice against hops in England, and they were for a long time considered as pernicious weeds. But they seem, on the whole, to be an useful addition to malt liquors. Without hops, or some such ingredient, we must always drink our malt liquors, either new and ropy, or old and sour; hops also are useful, for the purpose of making the liquor light

Dr. PARIS.

either drink our malt liquors new and ropy, or old and sour. There are several varieties of ale, distinguishable by their colour: when the malt is slenderly dried, the ale is pale; or brown when the malt is more roasted, or high-dried.

" Unleavened bread consists of a mixture of meal and water, formed into a firm and tough cake, made as thin as possible, to favour its drying, and sometimes with the addition of butter, to render it more soluble, friable, and porous; but it renders it sourer, and more apt to produce acidity on the stomach. Of the unleavened sorts of bread, biscuit is by far the best; and in all cases where leavened or fermented bread does not agree, its use cannot be too strongly advocated.

To dilute wine with water.

" This custom was a favourite practice amongst the ancients. Hence Bacchus was called Rectus, because he first introduced it, having taught a certain king of Athens to dilute his wine with water; men, who through drinking staggered before, by mixing water with their wine, began to walk straight. It is also said, in ancient mythology, that the jolly god was educated by the Naiads, or the nymphs of the rivers and fountains; implying, that men ought thence to learn to dilute their wine with water. But a question may arise as to the modification thus produced on the intoxicating powers of wine. I suspect that a quantity of wine, in a state of dilution, will be more intoxicating than an equivalent portion of vinous liquor in a more concentrated form."—*Treatise on Diet.*

Sir J. SINCLAIR.

and well flavoured; and without that ingredient, malt liquor would possess a clammy sweetness, or would soon turn sour and vapid. It is the hops that preserve malt liquor, strengthen the stomach, and dissolve the viscid phlegm."

" Unleavened bread consists of a mixture of meal and water, formed into a firm and tough cake, made as thin as possible, to favour its drying; and sometimes with the addition of butter, to render it more soluble, friable, and porous; but it renders the bread sourer, and is apt to produce heart-burn.

" Of the unleavened sorts of bread, biscuit is by far the best; and, in all cases where leavened bread does not agree, it cannot be too strongly recommended."

" This plan of mixing wine and water, as has been already observed, was a favourite practice among the ancients. Hence Bacchus was called Rectus, because he first introduced it, having taught a certain king of Athens to dilute his wine with water; men who, through drinking, staggered before, by mixing water with their wine, began to go straight. It is also said, in ancient mythology, that the jolly god was educated by the Naiads, or the nymphs of the rivers and fountains; implying, that men ought thence to learn to dilute their wine with water."—*Code of Health.*

We need here say little—pauca verba—as Sir Hugh Evans hath it.

EVANS.—*Pauca verba—Sir John—Good worts.*
FALSTAFF.—*Good Worts! Good Cabbage.*
MERRY WIVES OF WINDSOR.

As it is rather a tedious task—to search out these similitudes, we shall, in justice to the Doctor, transcribe a few passages, which we believe to be both original and perfectly novel:—

"I think it very probable, from the relations which its blood-vessels bear to those of the liver, that it (the spleen) administers in some way or other, to the latter viscus; but it cannot be instrumental in the formation of bile, as we have seen that this fluid can be properly elaborated without. Is it not an organ of compensation—a waste pipe, for the removal of any redundant blood which may be thrown into the liver? or a reservoir, to supply any deficiency which circumstances may create? and that, in this respect, it is to its sanguiferous, what the gall-bladder is to its biliary system?

This, however, approaches pretty closely to the vague conjectures of Sir Everard Home, regarding the spleen. We see no reason why Dr. Paris should not speculate upon this subject as well as Sir Everard Home.

In the very next page the reader will find another *inimitable* example of the Baconian mode of philosophising.

"It appears probable that the ultimate, as well as proximate atoms of different bodies, are endowed with different degrees of magnitude; a cracked jar has been known to retain oxygen for a considerable period without contamination; but when the same jar was filled with hydrogen, this latter gas speedily escaped; we find a rational explanation of this fact in the supposition, that the atoms of hydrogen have less magnitude than those of oxygen."

We have another perfectly original and novel hypothesis, on the function of the kidneys, which we have found in no other author.

"I shall conclude these remarks by stating, that one of the objects of the urinary secretion appears to be the removal of a portion of nitrogen, and perhaps also of oxygen, from the blood, as that of respiration is the abstraction of carbon. This hypothesis is supported by the ultimate analysis of lithic acid and urea. [No doubt oxygen will be found in the analysis]. It is, at least, evident, that some principle is withdrawn from the circulation, whose presence would act upon the system as a destructive poison. [Quere Oxygen?] Total suppression of urine is followed in a few hours by insensibility; but this consequence is prevented by the discharge of a few drops only of the secretion."

One more example:—

"It is not my intention, in this work, to enter into any speculations

with respect to the more minute changes which may be supposed to take place under this galvanic influence of the nerves. My determination in this respect has been made, in consequence of learning from Dr. Prout that he has been long engaged in the investigation, and has arrived at some very curious and important results, which it is his intention shortly to give to the public. In the next place, such details would be wholly inconsistent with the practical objects of my present publication. I shall therefore conclude this part of my subject by observing, that most of the digestive products are acid; the chyme is uniformly distinguished by this character; and, if the experiments of Dr. Prout be correct, muriatic acid is always present in the stomach; *we may, therefore, suppose that the nerves of this organ have the power of decomposing the muriatic salts, and transferring its alkali to some distant reservoir, perhaps the liver.*

We cannot find a parallel to this anywhere.

ART. III.—*Practical Observations on the Convulsions of Infants.* By JOHN NORTH, Surgeon-Accoucheur, M.R.C., &c. &c. pp. 294, 8vo. London, 1826.

Mr. North has brought to his task a very considerable portion of medical reading—or we may rather say learning, for he has read with judgment, and compared with diligence, while his own remarks are highly valuable. His style is perspicuous and scholar-like, and his practice ingenious and efficient.

The subject is an important one, when it is considered that so many children fall victims to convulsions. For example, it appears from a return made by Dr. Clarke, 1792, that of 17,650 children, born in the Lying-in Hospital of Dublin, one sixth died during their first year, and of these nineteen in twenty died of convulsions. At Copenhagen, Dr. Lange records 12,769 deaths from convulsions, in a period of thirteen years. Now making every allowance for exaggeration and mis-statements, still the number must be very great. The causes assigned for this frequency of the affection, are thus described by Mr. North:—

"The great disposition of infants to nervous affections is not to be wondered at, when we consider that the habit of bearing either external or internal impressions is yet to be acquired. "Every stimulus acts in an inverse ratio to the frequency of its application;" and, until the frail mind and body of the infant are accustomed by habit to have

their powers acted upon with impunity, the most hazardous susceptibility must necessarily exist. The muscles during infancy are pale, soft, and fragile; their contractions are quick, frequent, and feeble; and the external surface of the body is endowed with a very high degree of sensibility, in consequence of the nerves being covered only with a very fine thin cuticle. Hence, from very slight impressions arise very powerful effects. The circulation of the blood is very rapid, the arterial pulsations nearly double those of the adult. The capillary circulation is also infinitely more active. The lymphatic system exerts a more powerful influence upon the general economy of the infant than upon the adult. The muscular fibres as well as the skin is highly sensitive. The nerves are large in proportion to the size of the body. They resemble medullary pulps. Both the cerebral and ganglionic nerves are much more strongly developed in relation to the body than at any other period of life. The brain is large, and the nerves which proceed from it of a very considerable size. As we advance in years, and the muscular fibres become firmer, and our susceptibility to external impressions is consequently diminished. Hence it is, that in proportion as we advance in years convulsions are less likely to take place. They sometimes occur during the period of youth. In the adult they are rare; and they scarcely ever happen in old age. The sensations of a child are quick but transient. When any reaction takes place in the system, it is powerful and sudden, and coincides with the general mobility:—motion, indeed, is the language of an infant.

All children are not equally disposed to convulsions. Levret, Mauriceau, Baumes, and other writers, affirm that it may be established as an axiom, that children born with large heads, or whose heads increase in size disproportionably to the other parts of their bodies, will have convulsions. In my own practice I have seen convulsions occur very frequently in children with small heads. In ricketty children the size of the head is disproportionably large; and from the general symptoms of rachitis, it is evident that the head and spinal marrow are considerably affected: the brain increases rapidly in size, the senses are usually very acute, and convulsions are very frequent attendants of this distressing malady. It not unfrequently happens, when some children of the same parents are affected with rachitis, that others, who are exempted from this disease, are at a very early age destroyed by convulsions. The children of parents who marry at too early or too advanced an age, are more susceptible of convulsions than the progeny of those persons who marry in the prime of life.

When such predisposition exists, it would be well to attend to what Mr. North has so truly stated respecting causes which it is certainly in our power in a great measure to modify or avoid.

"It is an undoubted fact, that convulsions of children are of much more frequent occurrence in the present day than at any former period. The cause of this increase I do not pretend to determine. It may per-

haps be fairly inferred, that the vast increase of nervous diseases is to be imputed to the modern and vicious system of educating infants. It is at least certain that all diseases of that class have increased in proportion as polished education has removed children from the bodily freedom and carelessness of mind, which, to a certain extent, are so essentially necessary to the preservation of their health. In ancient Europe, convulsive affections were scarcely known. It will not be denied that mismanagement in the diet of children is a frequent cause of local irritation, which sooner or later gives rise to convulsions in many cases.

"Without being inclined to advocate the opinion of Rousseau, who considered reading to be the scourge of infancy, and who would not, therefore, allow his Emilius to learn a line by heart until the age of twelve years, it may be observed, that it is undoubtedly too much the custom of the modern system of education to stimulate the infant intellect to premature, and therefore prejudicial exertion. The recommendations enforced by Struve, should never be forgotten; and if they are forgotten by parents, it is the imperative duty of the medical practitioner to point out the necessity of complying with them. We should operate upon the tender intellect of a child by the gentlest progression. It must surely be much more judicious to complete the instrument previous to its use, than to employ it in an imperfect state. It is the same with children as adults. In the cultivation of the mental powers we are always to bear in mind the capability of the individual to answer the demands which are made upon him for exertion. It is not only irrational, but it is frequently destructive, to impose either upon the mind or body, but particularly upon the former, a load which it is incapable of supporting. It may be a source of consolation to those parents, who are too apt to lament any apparent loss of time in the very early periods of life, to remember that early acquirements are not to be gained without destruction of health, and that the future progress and mental powers of the individual depend upon the foundation which is laid in infancy by judiciously adapting the studies of the child to its age and constitution. By premature efforts to improve the powers of the intellect, the organ in which they reside is exhausted. The practitioner then, cannot too forcibly reprobate the pernicious enforcement of precocious studies. The injurious effects arising from the folly and false vanity of parents, who are ambitious of holding forth their children as specimens of extraordinary talent, are constantly presenting themselves to our view in a train of nervous symptoms, and of susceptibility to ordinary impressions, which frequently pave the way to decided paroxysms of convulsions.

"The mere confinement of a child of a tender age to the school-room for several hours a day, is highly improper. "Children (says Dr. Darwin) that are constrained to sit in the same place at school for hours together, are liable to acquire a habit of playing with some of the muscles of the face or hands, or feet, in irregular movements, which are called tricks, to exhaust a part of the accumulated irritabi-

lity by which they are goaded." Madame de Sévigné seems to have been perfectly aware of this fact by the pithy but not very polished observation, "*Je suis persuadée que la plupart des maux viennent d'avoir le cul sur selle.*"

The maxim of Hippocrates, "*A vigilia, convulsio; aut delirium malum,*" ought to be attended to in allowing children a proper portion of sleep, and not permitting them, as is too often done under the idea of indulgence, to sit up to a late hour. This is almost certain to lay the seeds of nervous and convulsive disorders. This ought to be carefully inquired into by the medical practitioner who is so well aware that it is much easier to prevent than to cure disorders of this class.

"That the brain is directly or indirectly irritated in most cases of convulsions, there can be no doubt. This irritation, may, however, last but for a moment, and be so trifling as to produce no serious derangement of the cerebral functions, much less any alteration of the cerebral structure. It may, it is true, be kept up by a repetition of the exciting cause, and produce irremediable mischief. We cannot, however, admit irritation of the brain to be the proximate cause of all convulsive affections; for in some cases of local injury they must arise independent of the mediation of the brain. It is also well known to physiologists, that if a nerve which is separated from the nervous centre is irritated, convulsions take place in the muscles to which it is distributed. That the communication by nerves is unnecessary to motion connected with sensation is evident in the case of the iris, which does not move by any known stimulus applied to its own fibres, but suffers elongation by the influence of light on the retina, with which it has no nervous communication. On the other hand, that the intervention of the brain is not necessary to the association of certain muscular movements from slight irritation on a distant part, such as usually produces sensation, is evident from the case of a fœtus, in which there was not the smallest vestige of a cerebrum or cerebellum, but which, even twenty hours after birth, moved up to knees when the soles of its feet were tickled, sucked my finger when introduced into its mouth, and a few hours before had passed fæces and urine, and swallowed food. It is true that in this case there were a spinal marrow and medulla oblongata; but the same motions are recorded as having occurred in another example, in which both these parts as well as the brain were entirely wanting" Dr. Brachet has exerted all his ingenuity to prove that every case of convulsions, partial or general, must be dependent upon cerebral irritation. The doctrine is not peculiar to him; but I cite his authority, as he is the latest writer upon the subject, and has obviously had considerable personal experience, which he has matured by an attentive consideration of the labours of others. He does not appear to me to be always consistent with himself; but it is not my object to enter into a critical examination of his work. I cannot conceive, however, that the convulsive affections which arise in

plethoric habits, where we are called upon to draw blood, and those which occur from the accidental loss of blood (for it is an axiom that every animal which dies from hæmorrhage suffers violent convulsions,) can alike arise from cerebral irritation.

"It has been said indeed, by the late Dr. Clarke, that "in every case of convulsion the brain is at the time organically affected, either directly or indirectly." This is a very important assumption, and from the acknowledged ability of Dr. Clarke it has a very striking influence upon the opinions of the present day. I am inclined to believe that the practice which has been founded upon this doctrine was neither contemplated by him, nor would have received his sanction.

"That in most cases of convulsions there is some functional disturbance of the brain, is not only probable but certain. It is also true, that organic disease of the brain may originally exist as their cause, or be subsequently consequential to them. But we must pause before we assent to, or shape our practice by, the unlimited statement of Dr. Clarke."

Upon the almost universal opinion that convulsions, and other nervous affections often result from the revulsion of cutaneous eruptions internally, our author makes some remarks which are worthy of attention, as they are far from being common place, and though we may not assent fully to his doctrines, they certainly merit the epithet of ingenious.

"The desiccation of cutaneous discharges of any kind is considered by various authorities to be a frequent cause of convulsions in children. Judging from my own observation, I should doubt whether convulsions were ever produced either by the natural or artificial disappearance of cutaneous discharges or eruptions, provided that a slight action was kept up for some time upon the bowels by the assistance of purgatives, and that their effect was not allowed suddenly to subside. I am aware that the united experience of almost every writer upon the diseases of infants is in opposition to the inference I should draw from what has fallen under my own eye. Popular prejudice is strongly also in favour of the generally adopted professional opinion, that it is hazardous to interfere with long-continued discharges from the surface of the body. It is observed in the *Dict. des Sciences Medicales*," Art. CONVULSIONS, that amongst the cutaneous affections, the repercussion of which may be productive of the most serious consequences to infants, measles is certainly to be enumerated. The author of the article states that he has seen many children attacked with fatal convulsions, in consequence of measles having been injudiciously treated. In the majority of cases, perhaps, medical assistance is not demanded for the treatment of measles, notwithstanding the occasional severity of the disease. Inflammations of the lungs and bronchiæ are among the most common accidents which supervene to measles; but I have never known convulsions follow, however injudicious the treatment might have been.

"Nature appears frequently to labour under considerable difficulty

in the production of various cutaneous affections, and previous to the occurrence of eruptive diseases paroxysms of convulsions not unfrequently occur. In such cases they are generally considered as a favourable omen. From my own experience, I should infer that this opinion is well founded, provided the eruption makes its appearance at the usual period from the commencement of the premonitory symptoms. Baumes, on the contrary, considers a convulsive paroxysm previous to an eruptive disease, as so bad an omen that the death of the patient may be prognosticated from its occurrence. M. de la Roche, Menuret, and some other writers, are also of the same opinion. It is well observed by Cullen, that if the attacks of convulsions previous to the appearance of the eruptions are severe and frequently repeated, the danger is considerable, and prompt assistance required. It not uncommonly happens, when a child has been exposed to small-pox, measles, scarlet fever, &c. that the most violent disturbance of the constitution arises at the period when the eruption ought to occur, and only a very slight appearance is observed upon the skin, which quickly vanishes. In such cases convulsions are common, and are frequently fatal.

"That the brain does sympathize strongly with affections of the skin, is a fact which is so frequently forced upon our observation, that no laboured confirmation of it will be required. There are some circumstances, however, connected with this admitted truth, that may admit of a moment's observation. When inflammatory action takes place, it is confined to the capillary system, which is independent of the cerebral nerves; but the latter are excited by the relation which they hold with the former; and if this excitement reacts with force upon the brain, convulsions may be produced. That convulsive phenomena are more likely to occur at the time of the appearance of the eruption, because it is then that the greatest degree of irritation exists.

We have observed that some respectable authorities look with suspicion upon the occurrence of convulsions previous to eruptive diseases, This discrepancy of opinion may perhaps be reconciled by reflecting, that whenever an irritation of the brain takes place in consequence of the sympathy of that organ with a distant part, that such sympathetic irritation, particularly in very irritable subjects, may pass into an independent irritation of the brain, which may be followed by very serious consequences, or even the death of the patient. Here then, the danger will be depending not upon the eruptive disease, which was the prime mover of all the disturbance, but upon the affection of the brain, which has been superadded. The opinion, therefore, that is so generally entertained, does require modification. Instead of asserting that convulsions which precede eruptive diseases are always harmless, we should only consider them so when they are produced by an excitement of the brain, which appears to be purely sympathetic.

Mr. North states it as the result of his inexperience, that worms are not so frequent a cause of convulsions as is usually supposed, for he has never met with a case of worms attended with convulsions, nor a case of convulsions cured by the expul-

sion of worms. In this we believe Mr. North is singular, and it would be wrong in any young practitioner to take this for gospel.

Premonitory Symptoms.—Some of the symptoms which Mr. North has stated as premonitory of convulsions only betoken deranged health in general, but when these continue to affect the little patient long, or occur in groups, we ought to guard against the threatened danger.

"It is always useful in diseases to examine the position of the limbs during sleep, particularly the sleep of children. If they deviate from the ordinary degree of flexure to the more straight position, there is generally some irregularity in the state of tone, and of course in the vital influx. Upon viewing the position of a child during sleep, whom, from the occurrence of symptoms above-mentioned, we consider disposed to convulsions, we shall frequently find the limbs almost rigidly extended, the great toes and thumbs being turned inwards. Stretching of the limbs, it is true, is both in adults and children a natural action, which is exerted to restore muscular equilibrium. In connexion with several of the other premonitory symptoms, however, it must be considered as a strong indication of a tendency to convulsive movements. The colour of the countenance varies frequently in children strongly predisposed to convulsive paroxysms: at one moment it is pale, at another highly flushed. No corresponding variation of the temperature of the surface of the body is to be detected. For a short time the countenance of the child is expressive of great animation—the eyes are vivid and glassy in appearance. Suddenly, and without cause, he appears languid and inclined to sleep. The breathing is irregular. The child frequently draws long and deep inspirations with apparent difficulty, and these are alternated with a short and catchy breathing.

This disordered respiration I consider to be peculiarly indicative of approaching convulsions. It is usually accompanied by a fulness of the upper lip, and a contracted appearance of the nose, which alter the natural expression of the countenance. The hands are frequently directed towards the nostrils, apparently without any voluntary effort, If we observe the fingers of a child highly disposed to convulsive diseases, we shall see them either in frequent and sudden motion, or firmly pressed towards the palm of the hand. The thumb is more frequently contracted upon the palm, the fingers at the same time being extended and separated from each other. In a discussion which lately took place at a medical society upon this subject, it was contended by an accoucheur of much celebrity, that this contraction of the thumb is not to be regarded as a premonitory symptom of convulsions. From my own observation, however, I can state that in children in whom we detect this firm contraction of the thumb, convulsions will almost certainly occur at some subsequent period; unless, indeed, the suspicion of the practitioner is roused, and appropriate remedies ward off the

threatened attack. When the child is put to the breast it sucks eagerly for a moment, and ceases suddenly, throwing back the head with an expression of anxiety in its countenance, and perhaps rolling it from side to side. Deglutition appears to be performed with difficulty when these symptoms occur.

"Hiccup is not unfrequently one of the premonitory signs of more general convulsions. Baumes regards it as a disease, and of sufficient importance also to demand a separate consideration. I have never seen this symptom alarmingly severe in itself in children, although it is sometimes troublesome from its frequency and long continuance. Hiccup consists in a sudden and involuntary convulsive motion of the diaphragm, accompanied by a quick and incomplete inspiration, which is attended by a sonorous noise, arising from a spasmodic constriction of the opening of the glottis. In adults, more frequently than in children, hiccup is a common symptom of many serious diseases, and is indicative of considerable danger in most cases. It appears, in fact, at the termination of almost every malady affecting the vital organs, a short time before the death of the patient. In children the frequency of hiccup is doubtless to be attributed in many instances to an excessive quantity of food stimulating a weakened stomach."

We cannot too strongly impress upon our younger readers, Mr. North's condemnation of the indiscriminate exhibition of opiates, and his judicious remarks on their employment.

"It was formerly supposed, that if a child was suckled by a woman who was menstruating, it would necessarily be attacked with convulsions. This opinion formed a part of many other ridiculous and imaginary ideas which were popularly entertained respecting females during the period of menstruation, and requires no further notice than the mention of its absurdity.

"It is a misfortune of no ordinary magnitude, that there are certain medicines containing opium or some other narcotic, in the hands of almost every nurse; such as Godfrey's Cordial, Dalby's Carminative, Poppy Tea, &c. &c. By the improper use of these articles, children are frequently reduced to a state of general debility and nervousness, which very strongly favours the occurrence of convulsions. It may appear extraordinary, that opium and similar remedies should not have the permanent effect of repressing the natural irritability of children, and consequently of preventing convulsions. The operation of opium, however, is relative to the particular constitution of the patient to whom it is given. In highly irritable subjects—and such are children—opium rarely acts as a sedative, unless its use is confined within certain limits, and preceded by treatment which will be subsequently referred to. It is much to be regretted, that a practitioner of the high respectability and long experience of Dr. Dewees, should express himself so loosely upon this important subject, in a work destined principally for the instruction of students. He speaks much too indefinitely, of 'large and frequent doses of laudanum' to young children."

"7thly. That the lymph and chyle must be sucked up towards the chest, through the direct communications which the vessels peculiar to these fluids have with the subclavian and other veins. The question of absorption, therefore, which has hitherto puzzled physiologists so much, may now be considered as decided, for it is clear that the open mouth of a vein, or of any other vessel, having the same kind of communication with the thoracic pumps, must absorb in direct proportion to the sucking power applied to it, and to the pressure exercised upon the matter to be absorbed.

"If this last proposition be well founded, so ought to be the following corollary, viz.

"That the application of a powerful cupping-glass to a recently poisoned wound, would prevent the absorption of the poisonous matter.

8thly. It being now evident, from every thing that hasbeen said, that the blood in the veins is placed under the influence of atmospheric pressure, it would be curious to trace the connexion which appears to exist between disease generally; intermittent fever for example, and the daily barometric variations.

9thly. The preceding facts explain also why animal life cannot be maintained beyond a certain degree of atmospheric rarefaction, and why it must cease as soon as the pressure of the surrounding air ceases to be superior to the gravity of the column of blood. Birds are provided with a respiratory mechanism, which, in some measure, exempts them from this inconvenience.

"10thly. At the cardiac extremities of the great veins there exists, as we have shewn, a mechanism, which, when called into action by the expansion of the thorax, distends their cavities, and, consequently, causes the suction of the blood of the veins of the lesser, as well as of the greater, circulation. Now, as this mechanism can act only during inspiration, and as, from its construction, and its position, it must necessarily affect those portions of the auricles within the pericardium, called the sinus venosi, it follows that there can be no alternation of contraction between these parts of the auricles and the ventricles corresponding to the pulse, because the sinus venosi must be in a state of progressive distention from the beginning to the end of inspiration.

The following case is given by Dr. Barry, as illustrative of his peculiar views.

"There is at this moment, in one of Professor Laennec's clinical wards, a patient, aged sixty-eight, in whose external jugular veins, and upper portion of the superficial thoracic veins, a regular pulsation has been observed for a considerable time. It has sometimes extended to the veins of the upper arm. The jugulars begin to swell before the artery, which beats forty-eight in the minute, but they arrive at their acme at the moment that the artery strikes the finger. The bleedings ordered for his disease, (hypertrophia cordis,) and a diarrhœa, which sometimes occurs, diminish the venous pulsation, but have never removed it. When this man is made to recite any thing,

the pulsation ceases entirely, but the veins continue to increase in size. (18.) When he inspires, in order to continue the recitation, the veins collapse immediately, and so on as long as he continues to speak. When the head of this patient is placed lower than his thorax, the veins of the neck swell prodigiously, and their pulsation ceases.

"This man lately became dropsical, his abdomen rapidly increased in volume, with oppressed respiration. The pulsations of the jugulars, however, still continued. He was tapped some days ago, and from twenty-five to thirty pints of hydropic water were drawn off. At the morning visit, after this operation, there was no pulsation observable in the veins of the neck or chest. The jugulars remained perfectly collapsed, and became prominent only when he coughed or expired strongly.—(17-18.)

"The accumulation of blood which, before the tapping, used to extend in the jugulars almost to the angle of the jaw, now takes place below the clavicle, and the jets which fall from the head pass through these veins without being perceived.

"Professor Laennec, besides permitting me to note these observations in his hospital, condescended to verify their exactness with me at the bedside of the patient *. To this learned physician, all foreigners, attending his practice and his most interesting pathological lectures, are largely indebted, for the kind assiduity with which he directs their research.

Dr. Barry's second Memoir, founded upon and suggested by the first, is upon absorption—and chiefly directed, as we have noticed in a former Number, to the absorption of poisons, and their removal by cupping-glasses applied over the wound. After the report of Laennec to the French Academy on his first experiments, a second series was instituted in presence of M.M. Pariset, Andral, Segalas, and Adelon, to ascertain

"1st. Whether the cupping-glass placed elsewhere than over the poisoned wound, or its immediate neighbourhood, would, by acting as a counter irritant, prevent absorption, or relieve the symptoms caused by it.

"2dly. Whether the cupping-glass acts upon the symptoms by recalling to the surface any portion of the matter already absorbed.

"3dly. How long its application may be delayed after the insertion of a given poison, and yet prevent the appearance of the symptoms.

M. Andral took notes of those experiments, which we shall now quote in his own terms.

Sixth Experiment.—"One grain of upas tieuté was introduced into the subcutaneous cellular tissue of the thigh of a rabbit, the wound

* I hazarded an opinion that the jugular pulsation would return again with the return of the dropsical effusion and consequent swelling of the abdomen. This prognostic was fully verified by the event.

was closed by a suture. Tetanus came on at the eleventh minute; at the end of the twelfth minute death."

Seventh Experiment.—"One grain of upas tieuté was introduced into the thigh of the rabbit as above. The cupping-glass was applied one minute after, and left on twenty-four minutes. About two hours after the glass had been removed symptoms of tetanus came on. Re-application of the glass for ten minutes—immediate cessation of the convulsions—poison removed from the wound—partswashed—animal restored to health."

Eighth Experiment.—"Introduction of a grain of upas into the thigh of an adult rabbit as above. Three minutes after the glass was applied, and left on twenty-four minutes. Poison removed, wound carefully washed; no symptoms."

Ninth Experiment.—"One grain of upas introduced, as before, into the thigh of a full-grown rabbit. Six minutes after the cupping-glass was applied, and left on twenty-four minutes. Wound treated as in last experiment: no symptoms."

Tenth Experiment.—"The last experiment repeated upon another rabbit. Glass applied ten minutes after the introduction of the poison, that is, less than one minute before the period when the symptoms of poisoning began to appear in the first rabbit. The glass was left on twenty-four minutes. No symptoms: wound treated as before."

Eleventh Experiment.—"Injection of six drops of hydrocyanic acid (au quart) into the cellular tissue of the thigh of an adult rabbit. In one minute convulsions; in two death."

Twelfth Experiment.—"Similar injection in another rabbit. Convulsions rather before the end of the first minute. Application of the glass; immediate cessation of the spasms, and permanent restoration to health, as in the other experiments."

Thirteenth Experiment.—"Introduction of four grains of upas tieuté into the thigh of a small dog. The piston cupping-glass was applied at the same time to a similar wound on the corresponding part of the opposite thigh. Symptoms of poisoning at the end of eight minutes: these soon acquired such a degree of intensity that the animal was upon the very point of expiring. In this state of extreme suffering the cupping-glass was removed to the poisoned wound, and the vacuum established. Instantly the symptoms were alleviated. The animal was truly recalled to life; but from time to time he still suffered slight attacks of tetanus. After a quarter of an hour's application the glass was removed, and the animal appeared restored to health."

Remarks by M. Andral.—"In this case the cupping-glass appears to have moderated the symptoms by arresting all further absorption of the poison; but that which was already in the circulation does not seem to have been recalled to the surface of the wound, because the symptoms continued, although mitigated; unless we choose to suppose that the continuation of the convulsions was owing to the impression already made upon the nervous system. On the other hand, the

animaleconomy does not rid itself of deleterious substances so promptly as is generally thought; this the following experiment would seem to prove.

Fourteenth Experiment.—"One quarter of a grain of pure strychnine, dissolved in two ounces of distilled water, was injected into the trachea of a middle-sized dog. For several hours after the animal showed by the stiffness of his limbs, and by a convulsive agitation from time to time, that he was still under the influence of the poison."

Fifteenth Experiment.—"With a view to observe whether the cupping-glass acted by bringing back to the surface any portion of a substance introduced into the cellular tissue by injection, we injected into the subcutaneous tissue of the inside of the thigh of a dog about two drachms of a saturated solution of the sulphate of soda. The wound was carefully wiped, and the glass applied. After working the piston a few times, we found the salt, by means of a proper test, in the reddish liquid which the pressure of the air had forced into the glass."

The other experiments on the bite of the viper, &c. were analogous, and followed by similar satisfactory results. We have thus given the chief of the views in Dr. Barry's work, which certainly deserves a place in the library of every physiologist.

ART. V.—*Researches into the Nature and Treatment of Dropsy in the Brain, Chest, Abdomen, Ovarium, and Skin; in which a more correct and consistent Pathology of these Diseases is attempted to be established, and a New and more successful Method of Treating them recommended and explained.* By JOSEPH AYRE, M.D. Member of the College of Physicians, &c. &c. pp. 242, 8vo. London. Longman, and Co., 1825.

This is an excellent work, (brief indeed, but not the worse for that) on a very difficult subject, whether we consider it as Nosological, Pathological, or Therapeutical. Dropsy is usually and generally considered as a disease resulting from general or local debility, or in some less frequent instances, from increased action or, accidental obstruction. Dr. Stoker, of Dublin, (our readers may recollect,) divides dropsies into Dynamic and Adynamic, the first arising from too much, and the second from too little action.

We may say safely that too little action on the part of the absorbents, is in every instance the result of debility. In most

cases profuse exhalation on the part of the secernents proceeds from a like cause, that is, a relaxation of the vascular orifices of the terminal arteries, and allow too much of the serous portion of the blood to escape. The history of most dropsies is illustrative of those views; for they may commonly be traced to some previous debilitating cause, which has been long or severely in operation, either locally or generally. The patient will, accordingly, in the greater number of cases be found to have been weakened by a protracted fever, or languishing under the effects of an unkindly parturition; that the frame has been unstrung by a long exposure to a cold and moist atmosphere, or has been worn out by hard labour, or, what is worse still, by hard eating and drinking. Long continued indigestion, or indeed any chronic affection of the organs of digestion, and particularly the liver, often also lays the foundation for dropsy; and, on the same principle, excessive hæmorrhage, or living upon innutritious or indigestible food may terminate in the same result. Such may be considered as the professional opinions most usually held in this country, respecting the origin of dropsy in general,—namely, that it results from a want of tone or energy in the absorbent vessels, by which the superfluous part is insufficiently absorbed. Let us hear Dr. Ayre's "more correct and consistent," views of this subject.

"The opinion of a want of tone in the absorbents, as a cause of dropsy, is contradicted by the fact, that in those cases in which it is assumed to prevail, it is found that the adipose matter or fat of the body is removed by the absorbents; or, in other words, that emaciation takes place to as great an extent, and as rapidly, in this as in other diseases; and emaciation can only be effected by means of absorption. Besides, in these cases of dropsy, mercury, when rubbed upon the surface, or received internally, is absorbed as readily, and affects the system as early, as under other states of the body. There is also no accumulation of the fluids in the joints, or in the bursæ mucosæ in these cases, which, nevertheless, would happen if there was a general debility of the absorbent system; and ecchymoses or livid spots, though easily induced in anasarcous limbs, are likewise easily removed from them by the absorbents."

We do not think this reasoning founded on sound logic, for though the absorbents are stimulated by mercury, and take up fat, yet the stimulus of serum is very different in nature. Besides it would be incumbent on Dr. Ayre, to show that it is the same set of absorbents which carry off superfluous serum, and which take up fat, effused blood, or mercury. That there is no accumulation in the joints or in the bursæ mucosæ, only shows that the absorbents are there unaffected. Dr. Ayre will

require to be more satisfactory in the principles which he establishes, than in these objections to the common opinion. He goes on to object to the increase of serum arising from a want of tone in the exhalants.

"The opinion of a want of tone or energy in the exhalants, involves in it one of the two following conditions; namely, either 1st. that the fluid of dropsy may escape mechanically from them, and that the fluid thus mechanically separated may be identified in its sensible and chemical qualities with another fluid which is confessedly secreted; or 2dly, that if the fluid of dropsy be secreted, then that an increase in the quantity of a secretion may continue an indefinite period, under a decrease in the energy of its secreting vessels; conclusions to which experience and analogy are alike opposed."

This we think is much better logic, than the author's preceding objections to the want of tone in the absorbents.

Dr. Ayre goes on to attack the theory of mechanical obstruction assigned as a cause of dropsy, which he thinks is disproved by the facts, that every assignable degree and kind of visceral disease is met with without any local dropsy; and local dropsy without any discoverable viscerable disease;—by the varying degrees of rapidity, with which, during given periods, the course of an accumulation proceeds; by the varying degrees of tensity of the serous discharge in successive effusions into the same cavity;—by the nearly uniform tendency of tapping to occasion an earlier renewal of the serous accumulation; and, by a direct evidence being afforded, that mechanical obstructions to the circulation, of the most direct kind, and very greatly exceeding those assumed to exist as causes of local dropsy, may occur, both temporarily and permanently without producing the slightest appearance of a serous discharge. He refers, page 10, to a case in the Medico-Chirurgical Transactions, by Mr. Wilson, in which the *vena cava* was found completely obliterated as a tube, from the point immediately below where the *venæ hepaticæ* unite to it downwards to its bifurcation; so that nearly the whole of the blood of the abdomen and lower extremities was obliged to pass through the liver in its passage to the heart, but without there occurring any watery effusion into any part of the body.

Having thus disposed of the causes usually assigned for dropsical effusions, Dr. Ayre goes on to assert his own doctrine of a morbid action in the cellular or serous tissues, which action he thinks is allied in its nature to inflammation. This view of the pathology of dropsy, will be best understood from Dr. Ayre's own summary of his arguments.

"That the effusion, therefore, arises from some particular action

in the serous tissue, and that this action is analogous to inflammation, is assumed, from several of the foregoing facts;—from the identity of the fluid of dropsy with that under some of the recognised forms of inflammation, even to the varying degrees of their tenuity; and from the action proper to dropsy obeying the same laws which govern inflammation generally. Since

"The action producing anasarca is propagated gradually by a continuous course along the serous tissue, as happens in common inflammation, is subject to metastasis; and is convertible into the higher forms of increased excitement. For the cellular membrane, in common with the other tissues of the body, is subject to various forms or gradations of inflammation. The highest is that in which pus is secreted; the second occasions a discharge of coagulable lymph; the lowest produces, as its result, an increase in the natural secretions of the part, and which, when produced in excess by natural causes, constitutes dropsy. Of these, therefore, the highest form, when supervening upon it, is destructive of the action producing the lymph, and this of the action producing the serum; and the effusion, whether of pus, or lymph, or serum, may be alike remedial of the excitement producing it, where that is not continued by a permanent cause.

"The serous inflammation producing a local dropsy, beside the causes hereafter to be noticed, may arise from some disease existing in the serous membranes of a cavity; or it may be secondary to a chronic inflammation in some viscus, and which, by a slow and progressive action, is propagated to the serous membrane investing it; whence, as from a point, it gradually spreads along the membranous duplicature of the cavity. When once established, it may be continued as a chronic affection, independently of its primary cause; whilst, on the other hand, it will be aggravated by all those causes which increase the visceral disease; and even to the extent of having a higher inflammation superinduced upon it, by which coagulable lymph may be poured out, and a farther effusion of water be prevented.

"Beside the proofs deducible from the particular phenomena of local dropsy, farther evidence of its depending on an inflammatory action, is derived from being sometimes connected with, and at other times arising from, a similar excited state of the general system, as denoted by the presence of serum in the urine, and sometimes by the state of the pulse, and of the blood; and which excitement may be either idiopathic, when it is usually most considerable, or symptomatic from a local disease. The absence of the serum from the urine, in the milder forms of the disease, may depend upon the insufficiency of the remote cause to act upon the general system; or upon the insufficiency of the local disease to induce the morbid action there; or it may depend upon the effusion into the serous tissue having removed the excitement which occasioned it.

"And, lastly, there is a constitutional effect arising from a permanent hydropic effusion, which agrees in its nature with that which proceeds from a long continued purulent discharge; they both being akin to

the effects which proceed from an habitual hæmorrhage, or from such other cause, as either withdraws or withholds from the blood, one or more of its nutrient parts. The gangrene, therefore which supervenes upon an œdematous limb, under the cachexy induced by any of these causes, is only what is common to the other forms of inflammation, under that condition of the system; and whether the hydropic state, or any other modified form of inflammatory action, precedes or follows, as the cause or consequence of the cachectical state of the body, the gangrene which ensues, is alike derived from the constitution."

The author goes on to divide his "serous inflammation," into subacute or chronic; symptomatic or idiopathic; and local or general,—the principal forms of the disease being hydrocephalus, hydrothorax, ascites, ovarian dropsy, and anasarca.

Hydrocephalus.—Dr. Ayre, in conformity with the preceding views, considers this disease as consisting in the proper serous inflammation of the membranous, or of the cellular or intestinal, tissues of the brain; by which an effusion of water takes place from them; and he accordingly thinks Dr. Golis has erred in stating it to be an effusion of pus, or lymph, or serum, or a mixture of these into the ventricles of the brain. He is of opinion, that strictly speaking, the true disease is comprised between the incipient beginnings of the serous inflammation, and its termination by the effusion; since the symptoms which follow, and compose what are called the second and third stages, are little more than the consequences of the disease, and arise from the mechanical pressure of water upon the brain.

Dr. Ayre has made some valuable and profound remarks on the connexion between hydrocephalus and disorders of the digestive organs, a portion of which we shall extract:—

"From observing the marked connexion thus seen to subsist between this turgescent state of the brain, from chylopoietic disturbance, and its serous inflammation, Dr. Golis has concluded that it essentially pertains to it, and, therefore, whenever it occurs, that it is a part of it; and he has thus considered it as forming the first stage of the disease, and preceding in all cases the excitement; and has accordingly enumerated, with their supposed diagnostic distinctions, all those very various and dissimilar symptoms, so multitudinous in their number, which belong to chylopoietic derangement, as denoting the approach, or the presence, of the cerebral disease. That the turgescent state, however, of the vessels of the brain, produced sympathetically by a derangement in the digestive function, is not essentially a part of the disease constituting dropsy of the brain, may be concluded from the fact, that this turgescent state of the brain, even to the simulating nearly all, if not all, the falsely assumed pathognomonic signs of the disease, is of frequent occurrence, and of comparatively easy removal, by means that are exclusively directed to the distant sympathe-

tic cause. By such, indeed, of my experienced professional readers, who shall honour these pages with perusal, numerous examples will doubtless be remembered of cases, in which they apprehended that effusion had taken place; and only discovered by the result that they had been mistaken. To myself many such have occurred. In several, I have seen or heard of the disease advancing, from the milder state of cerebral irritation, to apparently that of inflammation and effusion, and yielding rapidly and fully to those means, which were alone directed to the disordered condition of the digestive organs. Even paralysis, which may be thought to indicate most strongly the existence of effusion, may originate from a congestive state of the vessels, independently of any permanent pressure, and which may either remain after, or disappear with the other symptoms.

An example of this kind, strongly illustrative of this particular fact, fell under my notice some years ago in a child, whom I attended in the acute form of biliary disturbance, and who, when an infant, had been convulsed, as it was thought, from dentition, and whose mouth in consequence had afterwards continued distorted. In the course of the illness in which I attended the child, there were several of the usual symptoms threatening an effusion of water in the head; and during the several days these symptoms continued, the distortion entirely disappeared; which showed, that the contrary side of the brain had become affected, and that a temporary paralysis had been induced in the muscles, antagonists to those already paralysed, and that thus the distortion had become relieved. On the patient recovering, the original deformity returned. In some cases I have known blindness to prevail for several days; and in two instances the blindness, after being suddenly removed, was renewed a second time during the same attack, from some irregularity in the diet. There is, indeed, as I have shown in a work relating to this subject, no single symptom met with in the true disease, which is not sometimes found in the simulated one; and the difficulty is not merely considerable, but often insurmountable, in determining at once concerning them; and it is frequently, indeed, only by the result, that an opinion of their true nature can be formed. The simulated cases depend upon a pressure made upon the brain, by the turgescent state of the cerebral vessels; and to constitute the true disease of dropsy of the brain, there is only wanting that arterial re-action which should cause the fluid to be effused.

The cerebral turgescence and disturbance, therefore, in whatever degree they may exist, are only, when sympathetically produced, to be considered as morbid causes, whose presence, where the predisposition prevails, may lead to a serous inflammation of the tissues of the brain, but which do not form, in any sense, parts of the disease itself; since, under every degree of them, they are so frequently remediable by means, which are alone available for the removal of their distant and sympathetic cause. Nor is the distinction, here pointed out, of little practical importance; for the treatment suited to a turgescent state of the brain of an idiopathic kind, and therefore independent of

any distant cause, must necessarily differ from that which is strictly symptomatic of chylopoietic disturbance. In the one case, the attention must be exclusively given to the turgescent state of the cerebral vessels, as constituting an integral part of the disease; whilst, in the other, it must be directed principally to the disturbed condition of the digestive organs, and only subordinately to the head; as it is only by correcting the disorder in the digestive functions that the congestive state of the brain, as occurring in this latter case, can be permanently removed."

Hydrothorax.—The remarks of the author upon this disease are no less ingenious than deserving of attention. There is here no pretence, as in the case of hydrocephalus, for dividing the disease into stages, as the symptoms preceding the effusion are too obscure to be traced, yet are the morbid actions in both cases the same.

"In the case of the brain, practitioners are disposed to regard its disease as irremediable upon the occurrence of the effusion, and consider, very justly, the period of excitement, or of turgescence preceding it, to be those in which the assistance of our art can be alone rendered available. But there is in hydro-thorax a similar degree of serous inflammation; and our means, to be made useful, should be employed in this, as in the other disease, equally with the view of removing or preventing the excitement. The mode by which this state is induced in the serous membranes, is by the chronic inflammation that exists in the diseased organ extending to them, and not by the same form of inflammation being set up in them, by a certain sympathy or consent of parts, which, from a loose analogy, has been thought to subsist between similar structures."

The following pathological remarks, in so far as they tend to criticise the modern spirit of dissections, and to point out the principle of a plausible treatment, are important and interesting.

"Modern writers on pathological anatomy have prosecuted, with considerable zeal and ability, their researches into the nature of the diseases of the organs within the chest, but they have done but little towards elucidating the true relation which subsists between the diseases of the several viscera, and the serous effusions which take place into their cavities; for, by limiting their views to the disease which the post-mortem examination exhibited, they have overlooked those intermediate actions or states of excitement, which connect the organic disease with such effusions. Hence, where a palpable disease of the heart is found, as an ossification of its valves, by which its functions are disturbed, it is usual to consider such disease as acting in a mechanical manner in producing the effusion; and as there are no means available for the removal of such a cause, so it is thought here are no means available for the prevention of the effusion, which is supposed to be its natural and inevitable effect. Such cases, which

are much the most numerous of those by which hydrothorax is produced are, therefore, generally abandoned as incurable. The means, however, which are sometimes used, and that successfully, for the removal of the water, have now and then the effect, at the same time, of removing the chronic excitement producing the effusion of it; and radical cures of this disease are occasionally and unexpectedly occurring, under a plan of treatment which is thought to be exclusively suited, as it is confessedly directed, to the removal alone of the water. It was, indeed, by the occurrence of unexpected results of this kind, in some cases of this disease, and where the object of the treatment was merely to carry off the water, that my attention, several years ago, became more particularly called to a consideration of their nature; and by employing those means hereafter to be noticed, I succeeded in curing cases of the disease to which the ordinary treatment, pursued on such occasions, had before proved unequal.

Ascites.—The remote cause of water in the abdomen may be either symptomatic, or idiopathic, and either local or general. The symptomatic affection is often caused by diseases of the liver, spleen and other viscera, not from their enlarged bulk causing obstructions, but from the presence of actual inflammation, and consequently ascites does not arise in indolent cases, but in those which are in a progressive state, and when their peritoneal covering partakes of the disease.

"When ascites is an idiopathic affection, it may proceed from all the common causes of inflammation. The most frequent one is cold, and which may act either locally or generally. When in the latter mode, the ascites is usually combined with anasarca, and the disorder generally comes on suddenly, and has a rapid progress. The vascular system is excited, and there is more than usual thirst; the blood when drawn exhibits the buffy appearance; and the urine, when subjected to heat, is found to coagulate strongly from the large quantity of serum contained in it. In some of the severer cases, the effusion into the abdomen takes place very suddenly, and yet, by a copious bleeding, the disease may be at once arrested, and the water be afterwards absorbed. The subjects of this form of dropsy are commonly robust labouring men, whose employment carries them amongst water; and stout full-habited females, when they chance to take cold at a particular period. I have known the same to happen, combined with anasarca, from exposure to cold under the active operation of a purgative; though any of the ordinary causes of inflammation, as a suddenly suppressed discharge from hæmorrhoids, &c. acting on habits whose state of plethora predisposes them to it, will be sufficient to produce it.

It has been just remarked, that abstractedly from its causes, the watery accumulation is unimportant. This, however, must be understood of it only when the quantity is inconsiderable; for it may become by the effect it occasions on the peritoneal membrane, a source of farther disease. And this will be by the mechanical irritation it gives,

by its pressure to the organs and integuments of the abdomen, through the operation of that provident law of the animal economy, by which the tendency to an ulcerative inflammation is produced in parts, from a stimulus imparted to them by the presence of some noxious agent, and of which the final cause is the expulsion of such irritant from them.

Ovarian Dropsy.—The inflammatory affection producing this disease, is supposed by Dr. Ayre, to begin in the substance of the ovary, and then to extend to the serous tissue in which it is enveloped.

"The remote causes of the different forms of ovarian disease are exceedingly obscure. Blows or other injuries received on the iliac region, are sufficient to produce a common inflammation in this organ; and where the predisposition to it exists, the inflammation, in whatever way induced, may cause the development in it of scirrhus, or of some other form of chronic disease. The age at which menstruation ceases, from the uterine irritation prevailing at this period, seems favorable to its occurrence; and it is, therefore, more commonly found at this period than at any other, though I have met with it at every age, commencing from that of puberty to several years beyond the time at which this function ceases. At its early stage, this disease is distinguished from the two latter forms of dropsy just noticed, in not occasioning any of that general hydropic excitement of the system, which consists, as denoted by the serous character of the urine, of a disposition in the cellular tissue of the body, to take on that action by which the serous fluid is discharged into it. There is, therefore, no thirst, nor dryness of the skin, nor other indication of considerable disturbance in the excretory functions, so observable in the common forms of the disease. The ovarian dropsy is, therefore, a purely local affection, and is an example of that form of it which is called encysted, and which may occur in every part or organ of the body that contains in it a cellular tissue, or a serous envelope.

Anasarca.—The remote cause of anasarca varies according as it is dependent or not on some visceral or other disease; or, as it is connected or not with some adynamic state of the system; and whether as a cause or an effect of the same. In simple or idiopathic anasarca, the effusion of fluid puts an end to the serous inflammation when it arises, and when occurring alone is frequently vicarious of a similar effusion, which, under a slight variation of circumstances, might have been discharged into some cavity. It may derive its origin, as a purely local affection, from the ordinary causes of inflammation, acting either locally or generally; or it may be secondary to some serous inflammation seated in a cavity; or, in fine, it may arise from some disturbance in the digestive function, by which this and other distant irritations are produced, through the operation of what is denominated sympathy in the language of the schools.

Treatment.—Dr. Ayre founds his treatment on three indications: 1. To remove the visceral or such other disease or state, whether local or general, which, when present, proves a remote cause of the inflammatory action that terminates in effusion; 2. To remove the morbidly increased action in the serous membrane or tissue, which is the proximate cause; 3. To promote the absorption of the effused fluid. It will not be necessary to follow the author minutely into every step of his practical remarks on these indications; and we shall therefore content ourselves with selecting from his pages such detached observations, as appear to be interesting; more however, in connexion with the pathological principles above laid down, than from any very great novelty in the therapeutics recommended.

One point we should be strongly inclined to dispute with Dr. Ayre, respecting the use of calomel in hydrocephalus. He says, "it should never be used excepting in cases where the disease is symptomatic of some functional disturbance in the liver, an other chylopoietic organs, when it is calculated in conjunction with the local bleeding, &c. to afford the most important service." But why limit the use of calomel to hepatic and chylopoietic disturbance? Has it not also a decided action on serous membranes, as in the case of iritis? And may it not, and has it not often proved evidently serviceable in meningitis, and peritonitis? If Dr. Ayre had recollected these facts, it might have saved him the trouble of running up his nice distinctions, between hepatic disorders resulting from cerebral affections, and *per contra;* which are not in our opinion of much practical moment, any more than his distinctions between congestion and effusion. Could we be certain of such distinctions, they would be of unquestionable value; but not such vague and indeterminate ones as Dr. Ayre attempts to delineate.

His treatment of hydrothorax may be learned from the following paragraph, which is judicious and good.

"With some persons, whose system is in a plethoric state, and which may be judged of by the presence of concurring symptoms, it may be proper to commence the treatment by a full general bleeding; for a local congestion within the chest is not unfrequent in this condition of the system, and becomes often, I suspect, a cause of a serous inflammation of the thoracic tissue, independently of any previous disease; and where, therefore, a disease already exists, it will add conderably to its intensity. In ordinary cases, however, venesection will be unnecessary; for local depletion, combined with blistering, is more particularly adapted to correct that chronic inflammation of the serous membranes, which causes an effusion from them, and which is neither the result of any inflammatory excitement of the general

system, nor of a nature to produce it. General bleeding, therefore, excepting in the state of the circulation just noticed, is quite uncalled for, as it has no control over actions of so unmixed and so purely a chronic kind, and where the cause and seat are both local. Topical bleeding, when properly conducted, has the advantage of acting only slightly on the general system, and therefore only slightly on the general strength, and very considerably on the local disease; for however unsatisfactory the practice may seem, when reasoned on à priori, from the little connexion subsisting between the external parts of the chest and its internal organs, there is, unquestionably, the most important advantage to be derived from the practice, as every one experienced in its use can attest. Indeed, I am satisfied, that the advantage obtained from an occasional cupping or leeching of the surface contiguous to organs affected with chronic inflammation, will greatly exceed what several general bleedings would produce; and this, too, without any needless exhaustion of the strength.

"After subduing, by these means, the chronic action existing in the serous membranes, there will be much advantage derived from a seton fixed in the integuments of the chest. Its operation is not so sudden nor so direct as the leeches and blisters applied there; but it is calculated in this, as in other local chronic diseases, to produce a beneficial effect, by the habitual inflammation and discharge, and by the counter irritation which it keeps up in the neighbourhood of the disease, and where local evacuations, under a more active state of disease, are confessedly of service. For it is a character of chronic inflammation to continue gradually progressing for an indefinite period, and with degrees of slowness which are imperceptible; and it is the purpose, and often in the power, of a seton placed in its neighbourhood, to arrest this chronic inflammation, and thereby to put an end to the secondary inflammation in the serous membrane depending on it.

The same principles apply to ascites, though the indications will of course vary with the causes producing the disease. In the strictly idiopathic forms, when the pulse is hard the main remedy is copious bleeding, which frequently arrests the dropsical effusion in a very speedy manner. Leeches, followed by blisters and cathartics, were in such cases successfully employed by Dr. Ayre; and when the disease recurred as it sometimes did more than once, he repeated the treatment with equal success. Similar means firmly persevered in, are the best methods of treating ovarian dropsy.

Tapping.—Dr. Ayre very properly speaks of this as a necessary evil, resorted to for the purpose of averting a greater.

"The circumstances calling for this operation are, where, from the very considerable accumulation of the water, and the consequent distention it occasions, a permanent and morbid stimulus is given to the peritoneal membrane, by which the serous inflammation of it is perpetuated or increased; or where so much pain and irritation are pro-

duced, as to risk the inducing there a similar disease of the chest, and of bringing on likewise an ulcerative form of inflammation in the peritoneal lining of the abdomen; whilst the objections to its employment consist in the danger which is incurred; where there is much visceral disease, of its causing a destructive form of inflammation in the peritoneum; and the probability of its occasioning, under the most favourable condition of the disease, a more rapid renewal of the serous accumulation.

"The errors concerning its use, into which, according to my observation, practitioners are prone to fall, are in having recourse to it much too early, and, therefore, much too frequently; and likewise often under a condition of visceral disease, which renders its success impossible. In cases of simple ascites, to take the most inconsiderable example of it, where the cause is of an incidental nature, and but little connected with hepatic disease, the operation will be attended with no danger, and may be successful, but can rarely, if ever, be required where the proper treatment has been pursued; and should on no account be resorted to until after the amplest trial of all the various means for the removal of the water and its causes; and not until, through the failure of those means, it has begun, by its pressure upward, to threaten a serious disturbance to the breathing, and the other consequences just noticed; since in cases where tapping is too long delayed, the accumulated water, which is but an effect of a disease, may become itself a cause of one.

"The inconvenience of the operation, if so mild a term be allowable, is, we may repeat, in occasioning a renewal, or an aggravation of the serous inflammation in the peritoneal lining; whilst the danger in all cases is in the nature and amount of the visceral disease producing the dropsy, and not in the dropsy itself; because, even a slight degree of disease, especially of the liver, will sometimes produce ascites, when in a severer form of the same disease there shall be a very considerable quantity, or even no effusion of water, from the accidental circumstance of the peritoneal envelope of the organ being implicated in the disease in the one case, and not in the other. Many cases, therefore, of ascites, even when combined with anasarca, may be inconsiderable in point of danger, when the dropsy, under its simplest form of œdema of the ankles, shall be irremediable; since it is, in this last case, the sequel of an essentially fatal disease of the liver, or of some other viscus."

Dr. Ayre terminates his book with cases and dissections, selected from the standard works of the profession, as well as from private sources, and illustrative of the doctrines above laid down. For these cases we cannot now spare room, and to those who have perused what we have already said, they would not afford much additional information. We may observe that the author has separated his remarks from the cases in a very illogical and awkward manner, which is by no means in harmony with the general clear arrangement and perspicuity characteristic of the work.

ART. VI.—*Observations on M. Laennec's Method of forming a Diagnosis of the Diseases of the Chest, by means of the Stethoscope, and of Percussion; and upon some points of the French Practice of Medicine.* By CHARLES SCUDAMORE, M.D., &c. London, 1826.

Although we do not pretend nicely to define the exact degree of novel or important information that should authorize the physician to assume the pen, we have often been impressed with the necessity of maintaining some line of distinction, and on no occasion more forcibly than on a perusal of the volume before us. The practice of manufacturing the most common-place and insignificant observations into *a book*, which is ushered into the world under a most elaborate and imposing title-page *ad captandum vulgus*, appears, we regret to say, to be gaining ground among members of the medical profession, whose character and rank should render them superior to such unworthy artifices. We would not willingly overstep the bounds of professional courtesy, but when we consider how strongly such conduct tends to derogate from the respectability of the medical character, and to annihilate the line of separation which should always be broadly drawn between the honourable practitioner, and the sordid charlatan, we conceive it the duty of every honest Journalist to speak plainly out. We have observed that some cotemporary Journalists, in commenting on certain of Dr. Scudamore's former productions, have complained of the disproportion between the pretensions of the title page and the actual contents of the volume; and as a repetition of such practices, must inevitably be attributed to craft, it is matter of regret that the character of the present publication should be so ill calculated to disarm these accusations. To obtrude on the public, with so much formality and pretension, the heterogenous collection of common-place remarks which make up this volume, is, to say the least, disrespectful to the profession for whose perusal it professes to be intended, as well as hazardous to the reputation of the author.

This volume, which consists of about 120 octavo pages, widely printed, and with copious margins, is ushered in by a pompous dedication, three pages in length, to the president of the Royal College of Physicians; the most remarkable feature of which, is an attempt to smooth down certain scruples, which it would seem have been entertained against the stethoscope, on the ground that handling a mechanical tool is beneath the dignity of a physician!

After a preface of like dimensions, remarkable chiefly for inelegancy of composition, and which might with equal propriety have occupied any otherpart of the book, Dr. Scudamore enters on his first division, entitled, "Observations on M. Laennec's method of forming a Diagnosis of the Diseases of the Chest, by means of the Stethoscope, and of Percussion." From this title, we were, of course, prepared to expect some addition to our present information on these subjects; some new facts or arguments for, or against M. Laennec's mode of diagnosis. Our expectations on this head were raised to certainty, by the author's manner of alluding to himself in the preface:—"*he who contributes to the general stock of information*, may claim the merit of usefulness, although he be not entitled to the more brilliant distinction awarded to genius." (p. x.) Our hopes, were, however, a little dashed on finding him (at p. 5,) talk merely of an "*abridgment* of the opinions of M. Laennec, with a few reflections on the subject derived from his own observation and experience;" and our mortification was completed by discovering, on perusal, this boasted addition to our stock of information, to be nothing more than a repetition of a few, and only a few, of the most common-place facts with regard to the stethoscope; facts, that have been re-echoed in every medical Journal in Great Britain, during the last six years. We shall presently see how far Dr. Scudamore's pages on the stethoscope have any title to be considered as an abridgment of the opinions of Laennec; and as to the "few reflections on the subject derived from his own observation and experience," we have in vain sought for one new remark, or a single original observation.

Had Dr. Scudamore published, under an appropriate title, a correct abstract of the diagnostic system of Laennec, like the Compendium of Stokes or that of Collins, he might have rendered some service to the student, and "although not entitled to the more brilliant distinction awarded to genius, might have claimed the merit of usefulness." But if his work has no pretensions, except those in the title-page, to the character of an original production, it is still more deficient if considered in the humbler light of an elementary abridgment. Its unfitness for a text-book, for which indeed it was never designed, is sufficiently obvious. It does not contain one twentieth part of the facts necessary to guide the practitioner, as may be seen on comparing it with Stokes' or Collins' Compendia; and those which it does contain are so vaguely stated, and so scattered up and down, in defiance of all arrangement, as rather to perplex than enlighten. How could it be otherwise, seeing that Dr. Scudamore

has wholly omitted to explain those morbid conditions of the thoracic viscera on which depend all the varieties of sound, and which are of course the very foundations of all the indications obtained from the stethoscope?, Without a previous accurate understanding of these, it is clearly impossible to comprehend the nature or use of the instrument.

Dr. Scudamore informs us that the origin of this work was a visit which he lately made to the French capital; and truly his knowledge and observations are quite of that desultory and superficial character that one might expect from a person previously unacquainted with the subject, after a fortnight's saunter through the wards of La Charité; a kind of knowledge which though good so far as it goes, does not, in our opinion, exactly qualify its possessor to illuminate the world with an octavo. His reading on the subject appears to be confined to Dr. Forbes' translation; at least he makes no mention, nor indeed seems to be aware, of the existence of the elaborate publications of Andral, Bouillaud, Louis, and Bertin, nor of the humbler but meritorious compilations of Stokes, Collins, and Ryland: and we are well convinced, from a perusal of what he has written, that Dr. Scudamore is not more unfitted for a commentator on the stethoscope, by his ignorance of the labours of others, than by his want of practical knowledge. Although the general character of a work like this cannot be correctly appreciated from single quotations, a few references to the volume itself may be proper to shew that our animadversions are not unfounded, and to enable our readers to judge for themselves how far our author is himself master of the subject on which he has undertaken to instruct the world. He treats first of percussion; and the following passage, which constitutes the whole account he has given of the diagnosis of the diseases of the chest, founded on percussion, affords a very good specimen of his mode of handling his subject.

"The method consists in striking the respective parts of the chest, which return a hollow kind of sound when the contents of this cavity are in a healthy state; but give a duller sound, when, *from any cause*, there is impediment to the free entrance of air into the cells of the lungs. *When the obstruction is considerable*, the perception is very much the same as when you strike upon the thigh. The sound is flat instead of hollow." Now this passage, which, let it be observed, contains the *whole* account of the forms of thoracic disease, indicated by percussion, given in a work, formally professing to treat of percussion, is not only so incomplete as to be perfectly useless, but really presents a complete mis-statement of the nature of the indications furnished by percussion, and betrays a most unaccount-

able misunderstanding of what M. Laennec has written on the subject. The merest tyro in thoracic pathology could inform Dr. Scudamore that it is not *obstruction* or *impediment* to the free entrance of air into the cells, that is indicated by the density of sound, but merely a *diminution* of the *quantity* of air within the chest, and the substitution of a more dense material. Does Dr. Scudamore not know that *obstruction* or *impediment* to the entrance of air may take place, to so great a degree as to produce suffocation, and yet the hollow sound of the chest remain entire; and a circumstance which M. Laennec has very fully dwelt on, and which is exemplified in cases of emphysema of the lungs, pneumo-thorax, and in inflammatory affections of the bronchial tubes? In this manner then does Dr. Scudamore mis-state the simple but important fact which is the basis of all the indications obtained from percussion, namely, that the hollowness or the density of sound emitted, on striking the chest, is in proportion to the relative quantity of air, or denser matter which it contains; the sound being modified merely by the *quantity* of air within the chest, and having no relation (as Dr. Scudamore supposes) to the *freedom* or *difficulty* with which it enters. Passing from percussion to the stethoscope, the following, which are the *only* directions we find for exploring the state of the respiration, may be taken as another very fair specimen of the capacity of our *soi disant* commentator on Laennec.

"In examining the chest of a person whose respiration is calm, we should desire that it be made purposely quicker and stronger;" *(the usual, and we should think more rational way is to desire that it be made purposely slower)* "but not so *audibly* (instead of *audible*) as to cause confusion by that *(the)* external sound. The perception afforded to the auscultator by healthy lungs is that of air entering *(into)* a cavity as it were with a *gentle stream of sound.*" What description can be more absurd and unintelligible! "The perception of air entering into a cavity as it were with a gentle stream of sound," is a description more applicable (if applicable to any thing) to the tones of an Eolian harp, than to the murmur of respiration. Next follows, "If the pupil first apply his naked ear to the chest, he will have a clear idea of what he has to expect. As a general rule in making our investigation of the state of the lungs, the stethoscope should be applied immediately under the clavicle, near the axilla; and the learner will do well to choose the right side, lest he become confused by the action of the heart." As a general rule in making our investigation of the state of the lungs, we should think it necessary to apply the stethoscope not only beneath the clavicle, but over every other part of the chest where there may be reason

to suspect disease; and if the learner do well, to choose the right side, lest he be confused by the action of the heart, he will do still better in choosing the left side also, in order to teach himself (what he must have often to do) to judge of the respiration in the vicinity of the heart, and as obscured by the sound of its pulsations.

In pneumonia, we always considered the principal uses of the stethoscope to be, first, to ascertain the existence of the disease, and next to point out its extent, its degree or stage, and to mark its progress. From the experience of our author, however, it appears that the stethoscope has another and much more important use in pneumonia, which consists in informing us of the exact spot of the lung affected by inflammation, in order that we may know precisely at what part of the chest to fasten leeches and cupping-glasses! (p. 18). In bringing forth this valuable, and for aught we know, original idea, we fear our author has ventured beyond his depth, or rather reckoned without his host; for the plaguey fact that, throughout the greater part of the chest, there is no immediate vascular connexion between its walls and the surface of the lungs, and consequently, that the most contiguous parts are frequently the most remote in point of continuity, shews the fancied importance of applying leeches in pneumonia *immediately* over the inflamed part of the lung to be an idle chimera. So profoundly, however, is our author impressed with the importance of this idea, that he relates one half of the cases in his book, (viz. three,) with the view, as he says, of illustrating it. The cases, however, illustrate nothing of the kind. They are merely cases of pneumonia, in which, after general bleeding, benefit was derived from leeches, cupping-glasses and blisters, applied to the chest; a circumstance which assuredly required illustration from our author, having only been known to the profession for the short period of two hundred years. The last of these cases affords an illustration, if of any thing, of our author's talent for digression, which in the present instance, he exhibits by interrupting the narrative of the case, to introduce a stale theoretical disquisition on the changes which take place in the blood during inflammation. Generally speaking, the manner in which these few cases are written, is as injudicious as possible, for although professedly introduced to illustrate the use of the stethoscope, the author takes care to describe the indications furnished by it in the most vague and cursory manner, whilst the bulk of the case is devoted to an account of treatment and other common-place details, and not unfrequently interspersed with mawkish and extraneous reflections. To render a case on the stethoscope of the smallest value,

it ought to be minutely detailed, and to contain a regular record of the progress of the stethoscopical signs, in conjunction with the ordinary symptoms, from day to day; and it ought farther to possess every possible mark of authenticity and accuracy; but what Dr. Scudamore has dignified with the name of cases illustrating the use of the stethoscope, are three or four sketches or mere skeletons without name or date; and are deficient even in that appearance of accuracy necessary to inspire confidence in their results. Thus, in a case of inflammation of the lungs, we are shortly told in the commencement, "that the stethoscope applied to the lower part of the right side, conveyed to the ear a strong rattle, both on expiration and inspiration, much resembling the sounds of loud snoring;" and instead of following up this statement by an accurate detail of the variations of sound noted during the progress of the disease, our author dismisses the reader with the summary announcement that "*the actual relief of the patient perfectly corresponded with the improving indications afforded by the stethoscope!*"

From the complacent tone with which our author dwells on the details of his treatment, he evidently considers it his *forte;* but, judging from these few cases, we should consider him any thing but a scientific practitioner. He appears to us a practitioner of the old school; for instead of treating an inflammatory disease, by the prompt and proper management of one or two remedial means, according to the most enlightened principles of treatment, we find him working according to the obsolete system, with a great variety of medicines, each designed doubtless to fulfil a separate and laudable indication, but in reality counteracting the effects of the others. Thus, on being called to a woman of fifty, with pneumonia of eight days standing, we find him ordering bleeding from the arm in the morning, and twenty leeches to the chest in the evening, and giving, all on the same day, small doses of tartar emetic, with nitrate of potash in solution, every four hours; also some calomel, some James's powder, some colocynth, some extract of poppy, some aperient salts, "and *other general* means." Besides several repetitions of the bleeding and leeching on successive days, we are informed that the above delightful *melange* was regularly continued during some days; and to crown all, Dr. Scudamore coolly assures us that in this case "the *tartar emetic* proved *very decidedly* useful in its effects;" as if forsooth, it were possible to say so *very decidedly* what was the influence of the *tartar emetic* when thus conjoined with general and local bleedings, and the above formidable host of drugs. Ex pede Herculem. We hope, however, that this is not a fair specimen of Dr. Scudamore's general

mode of forming clinical observations, or rather of stating clinical facts; otherwise it would leave them very little title to confidence.

In another case of acute pneumonia, attended with great oppression of breathing, urgent cough and difficult expectoration; and where, in consequence of the obstruction to the flow of the blood through the lungs, there was general lividity of the face and lips, we are told "that such was the laboured state of the circulation, that the patient was affected with an almost constant disposition to faint; and it is added with great *naiveté* "as worthy of remark, *that free depletion removed the disposition to faint.*" Had Dr. Scudamore taken a few lessons in pathology, previous to writing lessons on the stethoscope, he would have known that the loss of sense which takes place when the vessels of the face and head are turgid with venous blood, is not called *fainting*, but *coma;* and, moreover, that the removal of such a tendency by depletion, so far from being at all extraordinary, is the most natural result possible.

In a work devoted to the stethoscope, and professing to be an abridgment of the doctrines of Laennec, one would naturally have expected some account of the extensive application of this instrument to the diagnosis of the diseases of the heart. The diagnostic marks of this class of diseases, furnished by the stethoscope, Dr. Scudamore has, doubtless for good reasons, thought proper wholly to omit; considering them perhaps as dry and uninteresting; and he has shewn equal felicity of judgment in substituting for them the more attractive subjects of nervous palpitation and intermittent pulse from gout!

The simple fact stated by Laennec, that when only one or two tubercles exist in the lung, a process of cicatrization may take place, has been unwarrantably perverted by Dr. Scudamore into the general assertion that M. Laennec does not regard phthisis pulmonalis, as an incurable disease. "It is a consoling circumstance that M. Laennec does not regard tubercular consumption as an incurable disease." (p. 30.) The cases to which we have alluded are, from their rarity, interesting, more as pathological curiosities, than from their affording any grounds for altering the too well established prognosis; and we leave it to our readers to decide how far he can be considered a faithful abridger of the opinions of Laennec, who thus represents him as extending to phthisis pulmonalis in general, an opinion, which he himself has expressly limited to a peculiar and comparatively rare form of the disease. When Dr. Scudamore subsequently draws as an inference from these cases, that a cure may be effected "in cases of consumption which were apparently

hopeless," he is not only guilty of obvious fallacy in reasoning, but renders the purity of his motives liable to be impeached. The substitution here of the popular word consumption for tubercles, (as if the two were synonymous) is equivocal; for to say that when one or two tubercles exist in a lung otherwise sound, cicatrization may take place, is one assertion; and to say that a cure may be effected "in cases of consumption, apparently hopeless," (taking that word in its popular sense) is another and mightily different assertion.

Dr. Scudamore's "Observations" must have been designed either for those who know something of the stethoscope, or for those who know nothing of it. To recommend them to the former would be an insult; and the latter would search in vain for an intelligible account of the stethoscope, either in principles or practice. Every one who has studied, or, what is synonymous, who has admired, the beautiful series of pathological discoveries opened up by the genius of Laennec, and the strikingly simple and ingenious system of diagnosis he has founded on them, must contemplate this miserable and mutilated exhibition of them by Dr. Scudamore, with an involuntary sense of pain, somewhat akin to that natural feeling of regret with which the man of classical taste would witness some magnificent production of ancient architecture, defaced by the hands of the rude barbarian, or perverted to some sordid purpose. As guardians of the temple of medical science, it is our duty to keep it undefiled by the changers of money, or at least to take care by the timely application of the proper tests, that their worthless coin shall not pass current for the sterling material of which it carries only the superscription and outward gloss.

Having thus discussed pretty fully the contents of the first and leading part of Dr. Scudamore's volume, we shall hold ourselves excused from inspecting with equal minuteness, the remaining hundred pages in which he proposes to discuss "in a brief manner, some leading points of theory and practice suggested to his consideration by the cases and facts which came under his notice at the hospitals in Paris." Although aware of the miscellaneous nature of the subject, and prepared to make every allowance for the excursive propensities of our author, we confess being a little startled at finding in this analysis of French theory and practice, such items as the following;—flaming eulogiums on the piety and resignation of the French Sisters of Charity; extracts from Galignani's Court Guide; discussions on Calomel, lavemens and white mustard seed; general precepts for bleeding; dissertations on gout; extracts from

Magendie's pharmacopœia; disquisitions on the French *cuisine*, and the like. The appearance of these various matters, under the head of French theory and practice, we are at a loss to explain, there being little apparent connexion (excepting perhaps in the case of the *lavemens* which form a *fundamental* part of the latter); so that we are half tempted to believe that Dr. Scudamore has sent by mistake to the press a few pages from the common place book of some one of that crowd of our youthful countrymen, that yearly take wing for the Gallic metropolis, more afflicted than the rest with the thirst for inkshed. We cannot, however, pass over in silence the last but not the least curious of the sundry matters that variegate these pages; this is a chemical examination of the water of the river Seine, undertaken by Dr. Scudamore, with a view to discover the cause of the dyspepsia which frequently assails John Bull on his first arrival in Paris; which said indigestion, some foolish people have attributed to the water of the said river; forgetting that this cause should act equally on the Parisians themselves, on the French from the provinces, and on all other strangers as well as English. As well might Dr. Scudamore have attempted to discover the cause of the tender feet which are the sure companions of English visitants, at least the pedestrian part of them, during the first weeks of their sojournment, by a chemical analysis of the stones of the Parisian *pavè*. In a chemical point of view, the whole process is besides the most school-boy proceeding that ever perhaps was dignified by the name of a chemical examination. It consisted in dropping into the water four reagents, and watching their effects for a minute or two; the first, we are told, "*produced slight milkiness;*" the second, "*considerable milkiness;*" in a few minutes after the third, "*an effect* was just perceptible," (what effect is not stated) and the fourth produced no effect at all. Such is the admirable chemical examination from which Dr. Scudamore draws the important conclusion, that "it is a water containing a very minute proportion of *solid ingredient!*" Had Dr. Scudamore really wished to state the chemical composition of the water of the Seine, he might have given one of the numerous analyses which have been executed by many of the first chemists of France, and which indicate its different ingredients to the 1000th part of a grain. In reality, however, this analysis is neither more nor less than a desperate but most unsuccessful attempt at a flourish.

One word on the literary merits of this volume and we have done. Notwithstanding the "boastful neighings," of Dr. Scudamore in the dedication about "early and regular education," we look in vain for traces of the classical scholar. On the

contrary, his style of writing is extremely loose—his sentences awkwardly constructed—his mode of expression circumlocutionary and strained, and we have noticed, in the course of our perusal, several instances of inaccurate language, and even of grammatical errors. Thus, for example, we have (p. 3.) " nice care being *observed,*" instead of care being *taken*; also (in the same page), the linen covering *over* the chest may remain." Speaking of the stethoscope, he says (p. 9.), " students are great enthusiasts in the practice of this discovery." The *practice* of a *discovery* is nonsense, and the stethoscope is not a *discovery* but an *invention.* " Competent in using it," (p. 10.) for competent to use it: " *general* fever ;" (p. 26.) a gross pleonasm; who ever heard of *local* fever ? " even if it *do* have this effect," for even if it *should* have this effect: " M. Laennec observes, that the superior lobes of the lungs are the most common seat of tuberculo*us* ulceration; but that *they* also *occur* in the centre of the lungs, &c.;" (p. 35.) " *accordingly* as the remaining part of the lung be free or not from tubercles," instead of *according* as : " the sputa of *ill* appearance and puriform without danger *in* the patient :" " the converse proposition," instead of converse of the proposition ; " mucus *floating* in the air-cells;" (p. 24.) " medical system of practice," instead of system of medical practice ; " visits of regular attendance," &c. The following are specimens of inelegant modes of expression. " This (Digitalis) becomes a valuable agent at the period *when we may hope to have laid* aside the use of the lancet," (p. 27.) " peculiar phenomenon of bleating sound ;" (p. 36.) ; " *derived an accuracy of* instruction for my treatment," (p. 109.) " blood extremely cupped *with* a dense, buffy coat," (p. 111.) " the mild medicine *of* sarsaparilla with hot milk," (p. 109) &c.

ART. VII.—*Memoire sur les Fongus Medullaire et Hématode par J. P. Maunoir, Geneva, &c.*

At no very remote period in surgery all tumours of a malignant and intractable character were very generally confounded under the common appellation of cancer. More recent and accurate observation, by shewing that the diseases thus indiscriminately classed present great differences of character, rendered it necessary to introduce new names. Now the coining

of words being a favourite employment, it soon came to pass that the names greatly exceeded in number the diseases which they were intended to represent. Whether from ignorance of the labours of others, or ambition to shine as original discoverers, we will not inquire ; but certain it is that the same species of diseased structure has been described by several distinguished surgeons, each appearing to consider himself as the original discoverer, and performing the duties of god-father with as much solemnity as if the foundling had never before been christened. Hence have arisen an unnecessary multiplicity of terms, much confusion of ideas, and general misunderstanding among British and Continental pathologists.

In 1795, Dr. Baillie published a description and engraving of a peculiar structural change which he had observed in the testicle, and to which he gave the name of the " pulpy testicle." Preparations under this name had been made, and may be seen in John Hunter's collection, and are evidently examples of the disease subsequently known by the names of fungus hæmatodes, &c. The same collection also contains other preparations of this disease, particularly one of the foot, under the name of soft cancer. In the year 1800, Mr. J. Burns, of Glasgow, published a description of a morbid structure, which he distinguished by the name of " spongoid inflammation." Three years afterwards, (1803) Mr. Hey, of Leeds, published several cases of a disease strictly similar, on which, without alluding to the observations of Mr. Burns, he conferred the title of " fungus hæmatodes." In the year following, Mr. Abernethy formally introduced the same disease, for the third time, to the notice of the profession, under the novel title of " medullary sarcoma",* without taking any notice of either of his predecessors. In consequence probably of the confusion in which the subject had thus been enveloped, the disease does not appear to have been generally understood, nor indeed to have attracted general

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* The erudite, but unscientific term Sarcoma, ought to be banished from surgery, because destitute of definite meaning. Its employment as a generic term, in a classification of tumours, where precision of language is indispensible, is particularly objectionable, and can only tend to produce utter confusion of ideas. Sarcoma is explained to mean a " firm fleshy tumour." (See Cooper's Dict.) Now we can understand accurately what is meant by a fatty tumour, or a cartilaginous tumour, because we know precisely what is meant by fat and by cartilage ; but we are at a loss to understand what is meant by a " firm fleshy tumour," because we do not precisely know what is meant by FLESH !

This laxity of language has led Mr. Abernethy into the solecism of making the *soft medullary tumour*, form a species of the genus sarcoma, or firm fleshy tumour ; the characters of the species being obviously at variance with the definition of the genus.

attention, till its pathology was placed in a clearer light by Mr. Wardrop's treatise in 1809. In this work, the author, without any pretensions to the character of a discoverer, performed a more valuable service to the science, by supplying the first complete history of this species of morbid structure, tracing its features with scientific precision, and establishing, by strict induction from the details of others, added to a more extensive series of his own dissections, its general and distinguishing characters*.

The history of this form of morbid structure, having been thus accurately traced, and its characters determinately established, there might appear little ground for farther misapprehension. But the comedy of Errors was not yet complete. M. Roux, in his "Voyage à Londres," (in 1814) announced to his countrymen that the disease, which passed in England by the name of fungus hæmatodes was not, as the French had all along supposed, identical with the disease which they were accustomed to call the "bleeding fungous tumour," but quite a different affection, classed by them under the head of cancer. It is proper here to remind the reader, that a species of tumour, composed of a mesh of anastomosing vessels, and resembling in structure the spleen or placenta; characterized farther by proneness to bleed, and sometimes by arterial pulsations, has been long known both in England and France. In its congenital form, it is by no means uncommon, and has often been classed along with *nævi materni*; in the adult it has been described by Mr. J. Bell, under the name of "Aneurism by Anastomosis." Such is the tumour to which the French had given the name of "tumeur fongueuse sanguine;" and the similarity in point of etymology appears to have led them into the erroneous supposition that it was the same species of tumour which the English had designated fungus hæmatodes. That so palpable an error should prevail six years after the disease had been so distinctly delineated by Wardrop, proves the ignorance of the French at that period, in regard to English surgery; whilst their awkward attempts, after the misapprehension had been brought to light, to represent the whole affair as an English

* It is curious to know that Scarpa, in a letter to Maunoir, (dated 1819) states, that there are preparations in his Museum, exhibiting a disease of the testicle, which he has long known under the name of *struma spongiosa* the characters of which, he says, coincide accurately with Wardrop's description of fungus hæmatodes of that organ. His words are "la storia del fungo hæmatodes del testicolo data da Wardrop, coincide si perfettamente con quella della struma spugnosa di quest," organo che nulla vi é di piu eguale." Callisen also describes under the same name a disease of the testicle, which is clearly identical.

blunder, which they had discovered and rectified, are not a little ridiculous. It is amusing to observe the complacency with which M. le Baron Boyer, "ce doyen respectable de la Chirurgie Francaise," represents the English surgeons as having confounded the two species of tumours, and then claims for his "beau-fils," M. Roux, the honour of having first signalized their mistake, by discovering their supposed new genus of tumours to be nothing but a soft and fungous variety of cancer; apparently not aware that the very essence of the improvement consisted in distinguishing from cancer, an extensive assortment of tumours, which had been previously confounded with it; tumours, differing remarkably from cancer in their anatomical structure, their progress, mode of increase, and in many other circumstances, important both in a pathological and practical point of view; tumours farther combining common characters so distinct, as naturally to form a separate family. Notwithstanding his display of critical accuracy, M. Boyer proves that he does not understand the discovery on which he congratulates M. Roux; for he immediately proceeds to detail under the head of "tumeurs fongueuses sanguines," several well marked cases of our fungus hæmatodes; such are the cases he quotes from Pelletan, Sennert, and the malignant tumour described by Pott, in the calf of the leg; whilst in the chapter on cancer, he has wholly omitted to describe, nay, does not even hint, at its soft or fungous variety. We have been thus particular in exposing the errors of Boyer on this subject, because his work is generally considered in this country, as representing the most improved state of surgical science in France; an opinion by no means so generally prevalent in that country itself; but in justice to the admirable pathologists of France, we cannot conclude without expressing our astonishment, that M. Boyer should exhibit such profound ignorance of the labours, even of his own countrymen, particularly of those of so distinguished an anatomist as Laennec, who more than *ten years* prior to the publication of Boyer's volume on tumours, had described the malignant structure in question with his characteristic accuracy and felicity, under the title of "encephaloides," a term adopted from the resemblance to the substance of the brain.—*(See his paper in the Dictionnaire des Sciences Medicales,* Art. Encephaloides.)

The memoir of M. Maunoir, which furnishes the title of the present article, is characterized by erroneous views, similar to those we have been occupied in pointing out. His main object is to enforce the distinction between the two structures already mentioned, of which this one has been variously termed in this

country, spongoid inflammation, fungus hæmatodes, medullary sarcoma, and the other of which is best known by the name of Aneurism by Anastomosis; a task, which so far as this country is concerned, we conceive somewhat superfluous, not being aware, as M. Maunoir has somehow persuaded himself, that the two diseases are generally confounded by English surgeons. He has adopted as the name of the former, medullary fungus; and of the latter, hæmatoid fungus, a transposition of names, which although, perhaps, not intrinsically injudicious, will not probably be followed on account of its tendency to introduce still farther confusion.

ART. VIII.—**Memoir on Abscess of the Liver.* By M. Louis.

We coincide with the author of this article, in the opinion, that, notwithstanding the numerous works which have been written on affections of the liver, there is still a great want of precise observations on this subject. The history of hepatitis he remarks, is very deficient, both as regards its causes, its symptoms, and its diversified terminations; so much so, that it is still a question with some physicians, whether purulent matter is ever actually formed in the internal substance of the liver, or whether it is not always found between it and the membranes, with which it is enveloped. Such a question would have maintained its place but a very short time, if proper attention had been paid to every organ in post mortem examinations.

"I have found," says M. Louis, "in 430 subjects, of which I examined attentively every organ, five cases, in all of which the abscess was internal, whilst not a single case presented itself of another description." I shall give the various symptoms which characterized these cases, together with the circumstances observed post mortem; for as we can only form our general ideas by deduction from particular facts, it is proper that these facts should be placed without restriction before the reader, who is thus enabled to judge whether or not our opinions have been legitimately formed.

First Case.

A girl, twenty-one years of age, of delicate constitution, was received into the Hospital, (Hôpital de la Charité,) on the 29th December, 1822. She had been delivered twenty-four

* Repertoire generale d'Anatomie et de Physiologie. Paris, 1826.

days previously in the hospital St. Louis, which she had quitted seven days after her accouchement. On her way home, she had caught cold, which had however left her a week before the commencement of her present complaint. This commenced by a severe pain in the præcordia, which was followed in the evening by shivering, succeeded by heat and perspiration. The pain ceased on the following day; but in four days afterwards sharp pain was felt on the right side of the chest: and towards evening, she again experienced rigors, followed by heat and perspiration, and accompanied with considerable thirst. There was also occasional nausea and diarrhœa; a number of leeches were immediately applied. On the next day the symptoms were as follow:—

Expression dejected and suffering; skin slightly tinged with yellow—considerable debility—no delirium nor headache; tongue red and dry anteriorly, white and moist on the edges; anorexia, great thirst—pain of epigastrium, increased by cold drink; lies on the left side—respiration short, quick, and oppressed—repeated forty-five times per minute; deep-seated, sharp, and darting pain under the right breast, augmented by pressure; increased heat—pulse 120.

The day following all these symptoms were increased, excepting the pain, which she only experienced slightly in the abdomen; the pulse was exeeedingly feeble; great drowsiness supervened, followed by delirium; she died during the evening.

Examination of the Body after death.

Abdomen.—The liver was of natural form and size, the middle lobe tinged yellow; the large lobe of an intense red throughout, and softer than usual. In the central part of its substance was a cavity of the size of an egg, filled with pus of a greenish hue, of good consistence and free from smell. It was enclosed in a false membrane, of a whitish grey colour, and of the consistence of the mucous membrane of the pyloric part of the stomach. The substance of the liver immediately around the abscess was more flabby than the rest; and near to this were six small spots of a greenish yellow colour, having the appearance of concreted pus. The biliary ducts offered nothing remarkable. The stomach contained but little liquid, its mucous membrane possessed the usual consistence near the pylorus; in other parts it was covered with a viscid mucous, and was tinged slightly red; but had so little consistence that it could not be raised in layers, excepting at the pylorus. The mucous membrane of the small intestines was slightly softened, but otherwise healthy, that of the large intestine was thicker

than usual, of a delicate red tinge, and so soft that it could only be raised like mucous. The mesenteric and mesocolic glands were scarcely visible. The spleen was small and its inferior part of a dark colour. The uterus was three times its natural size, and its cavity contained a red and rather slimy fluid. Its tissue had a reddish grey colour, and was easily torn; the uterine vessels had returned to their usual dimensions.

Chest.—The heart and aorta presented nothing remarkable. In the left lung, which was free from adhesions, we observed at the upper part a hard tubercle, and a small collection of a grey semi-transparent matter, and greyish granulations were seen spread throughout the lobe. The right pleura, lining the ribs and diaphragm, was coated with a false membrane, of a yellowish colour and soft consistence; becoming more thin and delicate, as it approached the upper part of the thorax. It contained five or six ounces of serum. The bronchiæ were throughout of a reddish brown tinge.

Observations.

Here we have pus found in the interior of the liver; where its substance was more red, and its texture more flabby than usual. The containing sac was formed of a membrane of considerable thickness and strength, immediately around which the hepatic tissue was more softened than the rest; and as reddening and softening of the tissues are the consequence of acute inflammation, we may believe that notwithstanding the absence of the symptoms of hepatitis, that this did exist wherever the substance of the liver was redder and softer than usual; and we form this conclusion with the more probability, that the relaxation of texture and redness were greatest immediately around the abscess, where one would naturally expect the greatest degree of inflammation. But the question occurs, at what period was the abscess formed? In the absence of the symptoms of hepatitis, we can only answer by anatomical considerations. From observations, which are hereafter stated, we find that recent false membranes, whose formation has been rapid, are soft and easily torn—the cyst in this case, on the contrary, had remarkable strength, which appears sufficient to make us believe that its formation was anterior to that which had involved all the large lobe of the liver, the mucous membrane of the stomach, and of the large intestine. With regard to the originating cause of the inflammation, we are left entirely in the dark. If we seek the cause of death, we shall find it rather in the inflammation of the mucous membrane of the stomach and colon, than in that of the liver, or even of the

pleura; and we may remark on this subject, that it is rare to find this complicated affection proceed in so rapid a manner. It manifested itself at first by severe pain in the præcordia, and by diarrhœa and nausea; it is very probable that the nausea, attributed by authors to inflammation of the concave surface of the liver, is the consequence rather of a complication of inflammation of the mucous membrane of the stomach, in the cases in which they had observed this symptom, analogous to what was observed in the one before us.

The increased thickness and redness, and the slight consistence of the walls of the uterus, indicated an inflammatory state of this part of the body, and shewed that a number of organs in this patient, had been simultaneously affected with a more or less acute degree of inflammation.

Secoud Case.

A man, aged twenty-three, laborious and sober in his habits, experienced in the month of March, 1824, all the symptoms of an acute inflammatory affection of the mucous membrane of the bowels. These symptoms disappeared under active medical treatment, and after a month the patient quitted the hospital perfectly well, excepting some slight diarrhœa. This affection remained, although in a very inconsiderable degree, during two years following, without interfering with his habitual employment, or impeding his digestion or nutrition. For the last two years, however, he had frequently suffered from headache and vertigo, which symptoms were occasionally relieved by leeches; but during two months past, they had continued without intermission, and caused his confinement to bed. On the 22d of February, 1816, he was seized with shivering, anorexia, thirst, and other febrile symptoms, with occasional nausea and slight pains in the bowels. His nights were restless, and he experienced vertigo when in the erect position. For the last twenty-four hours, he was also troubled with cough, which he had lately had during two months in which he had been affected with cold. He had been twice blooded without any evident advantage.

On the 25th March he lay motionless, and his countenance was strongly expressive of uneasiness; any effort of mind, and especially any exercise of memory, was painful; the headache was slight, but the erect posture always produced sensations of fainting or vertigo. He had an ulceration in the bend of his left arm, of the size of a half crown, in consequence of the venesection, which discharged healthy pus; there was a tumour also in the right arm, from a similar cause, containing pus. The

other symptoms were thirst, dry and white tongue, with red edges; pain in the epigastrium on pressure only; pulse tolerably full, 144 in the minute; little increase of heat, no cough, head kept low in bed.

He was ordered to be bled in the foot. During the next twenty-four hours the bowels were acted upon freely. On the third day all the surface of the body was slightly yellow; the thirst was increased; pain less felt in the epigastrium, but more in the hypogastric region; the right hypochondrium tense and exceedingly sensible to pressure; increased heat, pulse 116 full; debility increased.

Twelve leeches were ordered to be applied to the anus, the flow of blood from which was very considerable. On the 27th the yellow tinge of the skin was more apparent; the patient did not complain, and experienced no pain excepting on pressure being applied to the abdomen; the heat was increased, pulse 108, tongue dry, red and swelled.

Throughout the day fainting occurred, with involuntary stools. On the 28th almost continual somnolence, yet the patient is easily roused; pulse not so frequent; venesectio ad ℥x. The blood was covered with a buffy coat, moderately thick, and semi-transparent; the serum was small in quantity and of a yellowish green colour; stools involuntary. On the 29th his speech was unintelligible; tongue dry, tension of the right hypochondrium increased; respiration hurried; the respiratory sound strongly heard in the left side of the chest, very feeble in the posterior part of the right side, and scarcely to be distinguished in its anterior part. In these points also the percussion was very obscure; drowsiness continued, but was suspended by a severe pain in the throat, which occurred after mid-day. In the morning respiration became exceedingly anxious, and the rattle with which it was accompanied was heard throughout the whole ward, resembling the groans of an animal dying from strangulation. On examination of the mouth the uvula and palate were enlarged and infiltrated, and there was œdematous swelling of the throat. Leeches were ordered to be applied to the neck, but before their application the patient expired.

Examination of the Body.

Head.—Some traces of infiltration were discoverable under the arachnoid coat; the medullary substance of the brain was injected with red blood, as was also that of the cerebellum.

Neck.—The cellular tissue of the upper part was filled with serum, which behind the carotid was of a purulent character; the infiltration extended all around the palate, the uvula, and

the epiglottis ; even the membranous fold extending from the right side of the epiglottis to the corresponding aritenoid cartilage, and the right ventricle of the larynx were infiltrated with a yellow serous fluid.

Chest.—In the left lung were some adhesions at the upper part, and a little lower there was a kind of kernel of firm consistence, in the middle of which two irregular cavities were seen of the size of a filbert. These were lined with a greyish-coloured membrane, and contained a liquid of a dull red colour ; they communicated with the bronchiæ, which were enlarged at that point. The surrounding tissue was homogeneous, and of a reddish brown tinge, apparently not granular. The right lung presented also at its summit two similar cavities, one of which was, however, much larger, and bordered on the pleura, from which it partly received a covering ; around these some greyish semi-transparent granulations were seen, and two tubercles. The right lung was also covered with a false membrane, which adhered strongly at the base, and opposite to the cavity with which it appeared to be intimately connected. It was divided inferiorly into two folds, between which half a pint of pus was contained, of a beautiful yellow colour. Above this division the membrane was with difficulty separated ; it presented throughout a number of small abscesses, communicating with each other, and containing yellow pus. Some of them also communicated with sacs formed by layers separated from the false membrane, and which when cut perpendicularly had the appearance of lungs when they are almost entirely transformed into tuberculous excavations.

Abdomen.—The liver was large, and bulged out four fingers breadth beyond the edges of the ribs ; it reached downwards to the crest of the ilium, and upwards to the space between the fifth and sixth ribs. It had a deep red colour, and did not possess half its usual consistence. To the right of the suspensor ligament it presented a yellow spot, corresponding to a small abscess within.

Between the diaphragm and the liver there was a large collection of pus, which had its source in a large abscess situated in the obtuse edge of the liver, and having its right extremity opening into the abdomen. This abscess was divided into two by a partition, which nowever was partly destroyed ; that on the left was of the size of a hen's egg, that on the right was equal to the egg of a goose. This large irregular cavity contained a greenish turbid liquid, and a considerable quantity of pus ; it was lined by a membrane of a whitish colour, opaque, and of little firmness, from the inner surface of which a number of folds arose which floated in the liquid. Although the consis-

tence of this membrane was not greater than that of albumen which has been coagulated by heat, it could however be separated easily from the surrounding substance of the liver, and it contained vessels of considerable size, which ramified into the cavity. The colour of the liver around it was of a reddish brown, and was as firm as the rest. Two other cavities were also discovered on the right and left of the suspensor ligament, containing similar fluid. A yellow spot, placed near the large cavity, corresponded to a number of small abscesses; a second yellow spot, to the right of the ligament, corresponded to five other abscesses of a similar kind, containing also a small quantity of purulent matter, excepting three of them, in which were only found a yellow semi-transparent spot. The bile in the gall-bladder was more viscid than usual, and of a deep mahogany colour; the biliary ducts were sound. The mucous membrane of the œsophagus was healthy, but deprived of its epidermis. The mucous membrane of the stomach was filled with red points in several parts of its large cavity; in its anterior surface it was of a white colour approaching to yellow, and inclining to white in its posterior, where it presented several red bands, stretching in the direction of the small curvature. It was somewhat pulpy in the large curvature, but had its usual consistence in the anterior part of the stomach, where it had a remarkable nipple-form appearance, and presented several small spots of ulceration. The pyloric portion of the duodenum was healthy, but the mucous membrane beyond that was of a greyish colour, and in some parts of rather a pulpy texture. That of the small intestines was of a deep red for the last three feet, in the rest of its extent of a pinky, and somewhat livid hue; its texture was three times less consistent than natural; that of the colon in its first half was as pulpy as mucus, in the remainder it became gradually more consistent. The mesenteric glands had thrice their natural size, and were of a yellowish colour. The spleen was six inches in length, and of proportional breadth and thickness; its texture exceedingly pulpy. The kidneys possessed twice their usual size; the right had not half its usual consistence, and its cortical substance, which was of a yellow colour, was traversed by striæ of a reddish and purulent character. The other viscera offered nothing remarkable.

Observations.

Leaving for an instant these numerous diseased organs, let us consider the state of the liver. This organ was not merely red and pulpy, as in the former case, but was of a much increased size; it presented three large abscesses, one of which had opened into the cavity of the abdomen. The hepatitis had been mani-

fested during life by the pain and tension of the right hypochondriac region, and by the icteric symptoms. These had commenced five days before the death of the patient, and supposing, which is very probable, that the affection had commenced before this, yet its date could have been but very recent, so that the progress of the disease must have been extremely rapid. This is another reason for regarding redness and diminished consistence of texture, or pulpiness of the liver, "*ramollissement*," as signs of acute inflammation. We may add that, besides the pus, the abscesses contained a quantity of thin greenish turbid liquid, such as is ordinarily found as a consequence of the inflammation of serous membranes. We judge also that the formation of the abscesses was recent, from the little consistence and softness of their membranes; and that the cyst had probably preceded the pus, from several abscesses being found, in which there was only a small yellow semi-transparent spot, although the false membrane enveloping these was almost as thick as that of the large abscesses. The opening of vessels of considerable size into the cavity of the large abscess is a circumstance worthy of remark, as one may conceive the effect which would have arisen from this had the abscess communicated with the biliary ducts, as appeared to have occurred with another patient.

The biliary ducts were healthy, and there was only some slight softening of the mucous membrane of the duodenum, whilst that of the stomach, of the small intestines, and of the colon, showed marks of inflammation; but the inflammation was not confined to these viscera, it extended in a remarkable degree to the kidneys. Perhaps we may assign their increased size and deranged texture as the cause of the enormous magnitude and pulpy state of the spleen; this however is merely conjecture, and we shall do well in medicine as in philosophy, to remember the principle of Descartes, of regarding as false whatever is merely probable.

The pharynx presented also marks of violent inflammation, the rapidity of which was astonishing; it seemed to have run its course in six hours, as there was no pain of the throat till the evening before death. To the uncommon violence of this inflammation the œdema was owing of the tongue, the right ventricle of the larynx, and of the cellular tissue anterior to the epiglottis; and we may here remark that we have not observed such rapid inflammations of the pharynx, excepting in the course of severe diseases.

But amongst all the deranged structures presented by this case none was more remarkable than the false membrane which

was found on the pleura of the right side. Its thickness and hardness and the abscesses it contained, indicated that it had been a long time existing, and the symptoms observed when the patient was in the hospital two years before, point out that date as the period of its formation. The abscess it enveloped was most probably owing to tubercles, as many small tuberculous bodies were observed on the upper part of this membrane. It is a query with me whether the abscesses in the right and left lobes of the lungs, which appeared of very old standing, might not have been the cause of the formation of the membrane. Finally, for the last two years, and more constantly for the last two months of his life, the patient had been afflicted with head-ache and vertigo. The opening of the head showed the cortical substance of the brain to be of a very marked blueish pink colour, indicating a connexion between this derangement and the affections of the head.

The remaining three cases of this Memoir we shall probably present to our readers in a future Number, as our limits will not at present admit of giving them at considerable length, and they are too valuable, and the relation of the observations to the symptoms is too intimate to admit of their being much abridged.

We cannot help remarking in the course of our analysis that, however much we may admire the talents of M. Louis as a pathologist, yet the treatment adopted indicates any thing but an advanced state of medical knowledge. The venesection performed in this case, and the still more exhausting depletion produced by the application of leeches, when the patient had involuntary stools, and was evidently moribund, appear to us highly absurd; and to this we would attribute, in part, the rapid infiltration of serum, and œdematous swelling of the throat, rather than to the cause assigned by our author.

ART. IX.—*Practical Observations in Surgery; more particularly as regards the Naval and Military Service. Illustrated by Cases and various Official Documents.* By ALEXANDER COPLAND HUTCHISON, &c. Second Edition, London, 1826.

This volume is a republication of a smaller work, published by Mr. Hutchison, about ten years ago, and of several detached papers, put forth at different times, some in a separate form, others in periodical publications. These are here incorporated

with the modifications and enlargements, suggested by subsequent experience and reflection; and we have, in addition, several new papers on interesting subjects in practical surgery. We esteem this work, on the whole, as one of much real value. It is founded almost entirely on the author's own experience, which has been extensive; and it consists chiefly of valuable cases and facts, illustrative of important points in surgery, stated in a simple unostentatious and candid manner; and unincumbered by theory, formal dissertation, or parade of learning. From the writer's extensive opportunities in the naval service, many parts of the volume are particularly calculated to be useful to his brethren, engaged in the fleet and army. We propose to take a general survey of its contents, noticing more fully those parts, which, from their novelty, or superior importance, claim particular attention.

The first chapter, which treats of gun-shot wounds, contains much valuable matter, but being no longer new, does not claim particular notice here. The author enters very fully into the discussion respecting the proper period for amputating in injuries of this kind, where the necessity for the operation is, from the first, obvious. We need scarcely say that he coincides with the opinions now generally received among military and naval surgeons in favour of immediate amputation. The practice of immediate operation, the introduction of which has been claimed in France, by Baron Larrey, and in this country, by Mr. Guthrie, Mr. Hutchison shews, by authentic documents, to have been long in general use among English navy surgeons, and also to have prevailed to a considerable extent in the British army, although not formally or publicly broached previous to the writings of these gentlemen. The restriction to the general rule laid down by Mr. Guthrie, who recommends delaying the operation for a few hours, till the system recover from the immediate shock of the injury, is warmly opposed by Mr. Hutchison, who maintains that, in general, no such shock as that imagined by Mr. Guthrie takes place.

The second chapter relates to the plan of treating phlegmonous erysipelas, by free incisions through the cellular tissue, first practised in the naval service by our author, and enforced by him in the Medico-Chirurgical Transactions, upwards of eleven years ago. Its superior efficacy in this form of erysipelas, to every other mode of treatment, has since been established by extensive trials, and is now sanctioned by the general voice of the profession.

Chapter third contains a very full and interesting account of feigned diseases, particularly such as are in general use among

sailors, and deserves the careful perusal of all surgeons belonging to the public service. To them we consider this paper so valuable, that we have extracted the greater part of it in our Quarterly History, under the head of Medical Jurisprudence, a mode of arrangement which we prefer, because the subject has little relation to the other contents of the volume.

Passing over the fourth chapter, which contains many valuable and judicious observations on hospital gangrene, but not requiring particular notice, we come to chapter fifth, which is devoted to the subject of imperforate anus, and contains some very judicious instructions for the surgical management of this malformation, and an account of four cases in which the author performed or attempted the operation. The first point he considers is the period which should be allowed to elapse after birth before the attempt be made to perforate the gut.

"If a case of imperforate anus be discovered immediately after birth, the surgeon, we conceive, ought not to operate until after the expiration of from twenty-four to sixty hours, and not later, if possible; but by this rule it is not meant to imply that the operation may not be done with perfect safety and success at a later period; but merely that the time specified appears to us to be the most proper; for within this period no great inconvenience can arise; and it is *absolutely necessary that the rectum should be somewhat distended with meconium when the operation is performed;* otherwise the instrument, coming in contact with an empty gut, may divide two or three of its folds, and thereby do all the mischief we would wish to avoid; besides, a proper distention of the gut is essentially necessary, with a view to the success of the operation; and hence it ought not to be attempted until the expiration of the time specified after birth, when the rectum may be supposed to be well distended."

Speaking of the circumstances which assist us in judging beforehand of the probable distance between the intestinal cul-de-sac, and the external surface, besides the appearance of a pouch or protrusion at the side of the anus, which, of course, indicates that there is no great depth of intervening parts, the author states it as his opinion that

"Generally speaking, where the usual hollow between the nates exists, and the natural situation of the anus is well marked by a depression, the intestine will be in proportion near; and where these do not exist at all, the chances are that it is at some distance; but I do not mean to lay this down as a decided rule for the contiguity or distance of the gut from the surface. I am also strongly inclined to believe, from observation, that in such cases where not any hollow or mark at all exists, the sphincter muscle will in them be found to be wanting."

The directions given for performing the operation do not appear to us to differ materially from those laid down by preced-

ing writers and as to the mode of rendering the new aperture permanent, the author coincides with Mr. Benjamin Bell in thinking the common bougie preferable to every other instrument, care being taken to increase it gradually in diameter, and after the first fortnight, by degrees to diminish its *length* until it be reduced to one inch.

The first case in which the operation was performed by our author, was of the most favourable form of malformation. There was a distinct protrusion of the parts in the site of the anus, increasing on gentle titillation with the finger, and on thrusting the point of a lancet about an eighth of an inch upwards, the gut was opened and a quantity of meconium discharged. The opening was enlarged with a bistoury, and the cut surfaces having been kept separate by a slip of lint dipped in oil, the infant was discharged at the end of three weeks cured, and with a well formed anus. In the second case, where there was no protrusion, and where the natural cleft between the buttocks was obliterated, the attempts to reach the gut, first with the scalpel, and subsequently with the trocar, were unsuccessful, and the child died thirty-six hours afterwards. In the third case, a male child, where the sulcus between the nates was also wanting, and neither hollow nor depression was perceptible to mark the spot where nature had failed to complete her design, an incision was made with the scalpel in the line of the raphe through the skin and fat, about *an inch and a half in length* and nearly *as deep as long*, but tapering towards its fundus. The object not having been attained, a trocar was preferred to complete the operation. It was accordingly introduced to the bottom of the wound, and pushed upwards, backwards, and slightly towards the left for *about an inch*, when the stilette was withdrawn: no meconium flowed; the stilette was therefore re-introduced into the canula, which had not been shifted from its place, and pushed more than *half an inch* farther in the same direction. A want of resistance being then felt, the stilette was again withdrawn, and the meconium now flowed in considerable quantity. The whole depth of the incision was *three inches*. By the use of the bougie, a permanent canal was established, which continued to fulfil the functions of an anus during ten months; the stools became natural and well formed, but the urine was occasionally tinged with feculent matter. Notwithstanding this the child continued to improve in health, till the expiration of ten months, when it died from an attack of acute enteritis. On inspection, the following state of parts was observed: The small intestines appeared to be lying on the left side, and rested on the sigmoid flexure of the colon; and the rectum (from the

central point above the pubes) passed to the right side, rested upon the cœcum caput coli, and then turned downwards behind the bladder to the artificial anus. The lower part of the rectum adhered to the bladder by its peritoneal reflexion, in the usual manner. The rectum was distended with air, and of remarkable size; at its widest part, (which was five inches above the artificial anus) it measured *six inches and three fourths* in circumference. In the urethra, near the *verumontanum*, was found a small valvular aperture, communicating with the rectum. It was barely large enough to admit the end of a common probe, and could therefore allow the passage only of a minute portion of liquid excrement, whilst its valvular structure appeared to preclude the passage of urine into the bladder. The artificial canal had diminished to about one half of its original length, and the parts surrounding it were dense, compact, and approaching in hardness to cartilage.

The last case in which Mr. Hutchison operated, was that of a male child, in which the anus was distinctly formed and a small bougie could be passed nearly half an inch upwards, apparently in the natural passage, at which point there was a total obstruction, not even admitting the end of a small probe. After an incision similar to that in the former case had been made without effect, a trocar was pushed about three inches in the proper direction, still no meconium flowed. The child died in a few hours, and on examination the instrument was found to have passed posterior to the rectum, but so close as actually to have *grazed* its coats. The cul-de-sac, formed by the rectum, was found to be only a quarter of an inch distant from the bottom of the external cul-de-sac, so that had the incision been deepened somewhat more anteriorly, the gut would have been opened, and the child in all probability saved. This hint should not be lost on future operators. The singular disposition of the rectum, sigmoid flexure of the colon, and small intestines, described in the last case, was found to correspond in every particular with the appearances observed in this.

The sixth chapter contains several interesting cases of injuries of the head. One of the most remarkable is that of a depressed fracture of the occipital bone, with fissure, extending apparently to the foramen magnum. It occurred to a sailor-boy, fourteen years of age, who fell from a height of about thirty feet. There was total insensibility, and a puffy tumour on the occiput, which being cut into, exposed an extensive depression of the occipital bone. A circle of bone was removed by the trephine, preparatory to elevating the depressed portions. A considerable protrusion of the dura mater next took place,

through the opening made by the trephine, in the form of a tense pouch, and from its elasticity evidently containing fluid. This was punctured, and discharged about half an ounce of serum, slightly tinged with blood. After this the symptoms of coma evidently diminished, and in a few days completely subsided. A few spiculæ of bone afterwards exfoliated, and a small fungus arose from the dura mater, which was completely removed by the application of escharotics. In a few months the boy had regained a complete state of health and the full possession of his intellectual powers. From this case, which, with another, constitute two *successful* cases out of three, in which Mr. Hutchison has punctured the dura mater, he regards the operation as by no means so uniformly fatal as Mr. John Bell and other surgeons have represented.

The subject of the seventh chapter is an inquiry into the comparative frequency of urinary calculus among seamen. Whatever explanation of the fact be adopted, Mr. Hutchison has incontrovertibly proved by an immense mass of documentary evidence, that stone is a very rare disease among this class of people; the proportion of stone cases in any number of patients in a naval hospital being notably smaller than in the same number of patients in a civil hospital. Thus in 86,000 diseased seamen admitted into hospital, there were only five cases of stone; which gives the very small proportion of one in 17,200. Notwithstanding careful inquiry made at the principal provincial hospitals in the United Kingdom, and extending for many years back, no authenticated instance has been discovered of a sailor having undergone the operation for stone.

The subject of Mr. Hutchison's next paper is a case in which he operated for stone, by cutting into the bladder from above the pubes. The patient was a young man, aged twenty, who had been afflicted with symptoms of stone from infancy. The reasons for preferring this mode of operation were, first, that the stone was considered too large for extraction by the lateral incision; and secondly, as we are informed, "because the bladder could not bear distention, as it had never been sufficiently distended with urine." Admitting the cogency of the first of these reasons, we confess ourselves sceptical how far the latter circumstance can be considered a valid argument in favour of the high operation. Mr. Hutchison must be aware that the possibility of the bladder being in a state of contraction, and not capable of distention is one of the principal arguments that has been adduced *against* the high operation. The incisions were made in the manner recommended by Sir E. Home, and although the bladder was very much contracted, no great

difficulty appears to have been encountered in dividing it to the proper extent. Notwithstanding the full size of the incision, we are informed that

"Some little difficulty arose in disengaging the stone from its situation, notwithstanding the great assistance obtained by the introduction of the forefinger of my right hand into the rectum, while the fore-finger of my left was in the bladder to cant or turn the stone, so as to extract it by its smaller axis; and, indeed, this was not effected until the single blade of a pair of small stone forceps was introduced. The stone being thus turned, it was easily removed with the finger and thumb. In point of fact, so firmly did the bladder grasp the calculus, that the idea was conveyed to our mind of its actual adhesion to the coats of that viscus.

"One small cuticular artery was divided at the first incision, and secured at the time, to prevent the future steps of the operation being obscured by bleeding, and the subsequent issue of blood into the cavity of the pelvis.

"Two slips of linen, dipped in oil, were introduced through the external wound on each side of the bladder, but not into the bladder; a gum elastic catheter was passed into the bladder so as just to enter its cavity, and not farther, and was secured in this situation by tapes attached to the instrument, and to an elastic band, or retainer, in the manner described by Sir E. Home, but which in this case was made of flannel, lined with calico. The sides of the wound were brought together by slips of sticking-plaster, and the parts supported by a flannel roller, passed three or four times round the pelvis and the lower part of the abdomen. The patient, by means of pillows, was placed on the inclined plane, a vessel was secured to the end of the catheter to receive the urine, and he had an anodyne draught administered to him.

"I am fully aware that there are those who may imagine the trifling difficulty we experienced in extracting the stone arose from the depth, narrowness, and consequently from the supposed tightness, as it were, of the wound, through the parietes of the abdomen; but I can assure them that such was not the fact, for I enjoyed the most perfect freedom in that respect. The circumstance in my mind arose rather from the position of the stone, its size, and the strong contraction of the bladder upon it; for it will be borne in recollection, that the bladder, in this case, had never been distended beyond the size of the calculus, and that which two ounces of urine would occasion. What the bladder wanted in capacity, it possessed in the increased thickness of its parietes, for it was fully a quarter of an inch thick at the part divided; so that its muscular power must, therefore, have been considerable. I cannot avoid, in this place, repeating the great advantage to be derived from dislodging the stone, in such cases, by the introduction of the finger into the rectum, and which appears to me a great improvement in the mode of operating."

No bad symptom occurred. The wound was completely closed

in six weeks, when the urine was voided in a full stream through the urethra. The stone weighed eleven dr. two scr. and four grs. It measured two inches in length, and one inch and half in breadth. Mr. Hutchison is inaccurate in stating that the four cases of high operation, by Sir E. Home, are the only instances, "that have occurred since the days of Cheselden;" that operation having been performed since that period by more surgeons than one in England; and having been practised exclusively for many years past, by Dr. Souberbielle, of Paris; and to a smaller extent by other Continental surgeons.

The next case in Mr. Hutchison's volume, is a very interesting one of hæmorrhage into the urinary bladder, where the high operation was performed for the removal of coagulated blood. The subject of it was a gentleman aged seventy-two, who had laboured for twenty years under disease of the prostate gland. He had been long subject to attacks of retention, and shortly previous to the occurrence, which required the present operation, he had one where the catheter gave exit to a quantity of urine much coloured by blood, and containing small clots.

"At one o'clock in the morning of the 2d March," says Mr. H., "I introduced a catheter with the same facility as I had been accustomed to do during the last few days, and drew off half a pint of perfectly clear urine. I left him comfortable and free from pain. A quarter of an hour had hardly elapsed when I received a sudden summons to attend him. He was then suffering greater pain than ever from distention of the bladder, although it had been emptied so shortly before: it was quite evident, therefore, that this must have been occasioned by internal hæmorrhage, which was confirmed by the introduction of the catheter; and, as he had not lately complained of pain in the loins, we did not suspect the kidneys to be the source of it.

"I now endeavoured, by injecting warm water, and by the frequent introduction of the wire of the catheter, to break down the coagulated blood, but to no purpose.

"In this embarrassing situation, I proposed to Sir Astley Cooper, who was sent for, to cut into the bladder from above the pubes—the diseased and enlarged state of the prostate gland alike precluding the operation being performed either through the perinæum or rectum. This proposal was acceded to, as the only chance left of prolonging the life of our patient.

"In the presence of that gentleman, therefore, I made an incision into the bladder of between two and three inches, cutting between the pyramidal muscles, as in the high operation for the stone, and, with a spoon, scooped out upwards of a pint of coagulated blood, there not being more than a very few ounces of urine likewise contained. The operation was not performed until upwards of twelve hours subsequent to the hæmorrhage. On examining the interior of the bladder with

our fingers, we discovered two fungoid tumours projecting into this viscus from the prostate gland; and from which tumours we concluded the hæmorrhage must have proceeded, for the bladder in every other part seemed perfectly healthy. The entrance of the urethra was situated between the two tumours; the left being about the size of a hen's egg, and the other that of a large walnut.

"A syphon was now made of a leaden catheter, one end of which was introduced into the bladder by the wound, and a calf's bladder was made fast to the other, as a reservoir for the urine. The head and shoulders of the patient being raised by pillows, an opiate administered, the instrument properly secured, and the air exhausted from the long leg of the syphon by means of a common syringe, we left him in a comparatively easy and comfortable state, and the syphon performing its office efficiently.

"During the first three days after the operation no case could proceed more favourably; the bowels were naturally open; there existed no tension of the abdomen; the wound looked healthy; the patient's spirits and relish for food were tolerably good; and, upon the whole, the general aspect of the case was favourable.

"On the fourth day, however, from the operation, a great change took place: his spirits became depressed; he declined all kind of sustenance; his looks were sunken; his pulse was feeble, and a want of action in the wound was but too apparent; and, notwithstanding every effort to save him, he continued to sink gradually until the 7th March, being the sixth day after the operation, when he died—in full possession of his mental faculties up to the latest period.

"I lament to say that permission to inspect the body was not obtained.

"I have related the particulars of this case at some length, as it is the first of the kind that ever came under my observation, and only the second which had come under that of Sir Astley Cooper."

We consider the introduction of the *wire* of the catheter, with the view of breaking down the coagulated blood, as both a dangerous and an unlikely measure. In another case of the kind the stomach pump, with a gum-elastic catheter attached to it, would be well worthy of a trial, before resorting to the knife.

The next case detailed in Mr. Hutchison's volume, is that of a popliteal aneurism, the cure of which was attempted by a temporary ligature on the femoral artery, in conformity with the views suggested by Dr. Jones, in his well-known work on hæmorrhage. The result of this case, and of subsequent trials of the plan in the London hospitals, has completely disappointed the expectations entertained from it, and it may now be considered as generally abandoned. It is, however, proper to state, that Mr. Hutchison's operation cannot be considered as a complete trial; for having removed the temporary ligatures at the termination of six hours, and finding the

pulsation of the tumour to return with its original force, he abandoned the plan, and substituted two permanent ligatures; the intervening portion of artery being left uncut. Hæmorrhage took place on the 21st day, from the lower part of the vessel, which was secured by a ligature; but the hæmorrhage recurring on the 25th, from the upper part, it was considered advisable to remove the limb, more especially as the pulsations of the aneurism had again returned. The man, who was of an irritable habit and of a despondent disposition, died ten days after the amputation. There does not appear to have been general disease of the arterial system, but the arteries to which ligatures had been applied, displayed obvious traces of diseased action in the vicinity of the ligatures.

The remaining part of the volume contains a few miscellaneous cases, with remarks; the most remarkable of which is a case of lumbar abscess, successfully treated by injecting the cyst with lime water; and two favourable cases, where a new nose was formed by the Taliacotian operation.

ART. X.—*On the Elementary System of Physiology.* By JOHN BOSTOCK, M.D. P.G.S. &c. Vol. 2. pp. 643. London, 1826.

We have the same favourable account to give of this second volume of Dr. Bostock, as of the first; and although its appearance has been somewhat later than was expected, yet the time has evidently been well employed in collating, arranging, and digesting the numerous and important subjects it contains. This labour is increased in no trifling degree by the rapid progress of the science of physiology, which, advancing on the true philosophic principle of experiment, is daily occupying fresh ground, and leaving behind it a chaos of conjectures, and unfounded hypothesis. It is true, we have in the present day men of small intellect, who are incapable of perceiving the principle by which it is guided in its successful progress, and who would fain steal a march upon it, by hazarding occasionally a probable conjecture, or by putting a cautious interrogatory; but such may spare their vain attempts, which only expose them to ridicule. It is true, that by hazarding a number of hypothetical opinions, they have the chance of anticipating the results of philosophic deduction, and of earning thereby great praise for their sagacity; but we can assure these speculators that

their chance of such lucky coincidence is exceedingly small, while that of exposing themselves to laughter is proportionably great; and we would kindly advise them, if they will persist, to confine their physiology entirely to the spleen, the appendix vermiformis, or other terra incognita of the system. These remarks are called forth, not by the present work however, but by others which have lately come before us. We must do Dr. Bostock the justice to say, that he seldom risks any doubtful conjecture, but forms his opinions rather from a cautious review of the opinions of others, and a careful deduction from the facts before him. The student, however, will find the work valuable, chiefly from its bringing before him in one view the various experiments, observations and theories, regarding the numerous subjects of the science, by which he is put in possession of the main facts and principles up to the latest period; and from its laying open to him, by a copious and valuable list of references, the sources from which he may obtain more particular information.

The subjects treated of in this volume are RESPIRATION, ANIMAL TEMPERATURE, SECRETION, DIGESTION, and ABSORPTION; the first of these is thus defined:—

"Respiration consists in the alternate reception and emission of air into and out of the lungs, at the same time that the blood is transmitted through a set of vessels so situated as to enable the air to act upon it, and to produce that change in its nature and properties which fits it for the support of life."

We might have excused so clumsy a definition as the above, which presents itself in the second sentence of the work; but the commencing sentence is equally inelegant. We would advise the Doctor in a future edition to alter both, and to avoid giving to his readers, as he has done to us at the very outset, so unfavourable an impression of his style.

Respiration, we conceive, may be simply defined, the reception and emission of air by the lungs, with the consequent changes effected on the blood. This is at least shorter, and perhaps is more correct, in as much as it does not involve the hypothesis, that the transformation of venous into arterial blood is produced by the simple action of the air; an hypothesis, which is combated by Adelon, who attributes this effect to an organic and vital action of the lungs themselves, analogous, we imagine, to that of the secreting organs.

As this is a subject of great importance, we shall transcribe at considerable length what Dr. Bostock has written regarding it, before we add any other remark.

"The change which is produced upon the blood by respiration in-

volves an inquiry of a much more difficult solution than that respecting the change in the air, in proportion to the greater difficulty of ascertaining the chemical nature of the ingredients of the blood. Indeed, so complicated is this fluid in its composition, and so peculiar in its constitution, that scarcely any attempts have been made to investigate the effect which respiration produces upon it, by examining the substance itself; all that we are able to accomplish is to deduce this effect from observing the changes which we find to have taken place in the air, assuming that the blood has been the medium by which they were brought about.

"The extreme vascularity of the lungs, and the great proportion of blood which is sent to them, induced even the earliest physiologists to suppose, that some important effect is produced upon this fluid by respiration: this idea was strongly countenanced by the discovery of Harvey, that every portion of the blood passes through the lungs at each complete circulation; and it was still farther confirmed by the observation, that the change from venous to arterial blood takes place in the capillaries of the lungs, and that the air is essential to it. The opinions that were entertained respecting the nature of this operation, and the manner in which it is effected, were very various, but they may be all reduced to three classes. A numerous and learned body of physiologists supposed the effect produced on the blood to be merely mechanical. Some of them thought that the particles, by the agitation which they must experience in passing through the pulmonary vessels, were more completely comminuted or mixed together, so as to render the mass of an homogeneous consistence. This idea depended upon the supposition, that the velocity of the blood was greater during its passage through the lungs than in the other parts of the circulation: a supposition which Hales conceived to be decisively proved by actual observation, and which was, at one time, very generally adopted. There were others, however, who thought that the motion of the blood could not be quicker through the lungs, and others again who thought it must even be slower in this part of its course, founding their opinions principally upon certain anatomical considerations, connected with the structure of the heart and its great vessels. We shall probably be induced to coincide in the opinion of Haller, that the average velocity of the blood through the lungs is not greater than through the other parts of the body; but that its momentum must be much less, because it has fewer obstacles to its progress, a circumstance which is sufficiently indicated by the comparative weakness of the right ventricle. Boerhaave and his disciples thought that the blood acquired its peculiar organization in the lungs, but they do not appear to have thought it necessary to inquire in what way the effect was brought about. The question whether the blood was rarefied or condensed in the lungs was zealously contested by the mechanical physiologists, one party supposing that the addition of a portion of the air must render the blood specifically lighter, while others conceived that the exhala-

tion of the aqueous vapour and the contact of the cold air, must increase its specific gravity."

"A second class of physiologists, in which we find the illustrious names of Harvey, Boyle, Hales, and Haller, supposed that the blood, in its passage through the lungs, discharged some noxious matter, which, together with the aqueous vapour, was removed by respiration; while a third class, among whom we may rank Lower, Hooke, Mayow, and many of the Italians, conceived that the air imparted something to the blood, by which it was converted to the arterial state. We shall find that none of these opinions is strictly correct, even in the outline, and when their respective advocates proceeded to give them more in detail, they quickly degenerated into mere fanciful hypotheses.

"Soon after Harvey had completed the discovery of the circulation, the difference between the colour of the arterial and the venous blood was clearly pointed out, and Lower ascertained that the change of colour took place in the capillaries of the lungs. Before his time the bright scarlet colour of arterial blood had been ascribed by some to a kind of combustion, which is kept up in the heart, by others to the breaking down of the red particles, or to other causes equally inadequate and equally unfounded. By opening the thorax of a living animal he perceived the exact point in the circulation, where the change of colour takes place, and he proved that it was not in the heart, because it still remains purple when it leaves the right ventricle. He then kept the lungs artificially distended, first, with a regular supply of fresh air, and afterwards with the same portion of air without renewing it, when the result was that, in the first case, the blood underwent the usual change of colour, while in the second it returned to the left side of the heart, still retaining its purple hue. Hence he naturally and correctly concluded, that the alteration of colour is effected by the air, and he still farther enforced his opinion by observing the action of the air on the crassamentum of the blood out of the body, which, so far at least as the colour is concerned, he found to coincide exactly with what takes place in the lungs. We are now so familiar with the facts mentioned by Lower, and are so well assured of the general correctness of the method by which he accounted for them, that it is impossible not to feel surprised at the little impression which his opinions produced upon his contemporaries. We learn, however, that they were almost entirely disregarded, and so completely was the attention fixed upon the mathematical hypothesis, and so permanent an influence had it acquired over the minds of physiologists, that even Haller decidedly opposed the doctrine of Lower."

The doctrine of Lower was successively adopted by Cigna, of Turin, who performed many experiments relating to it, and also by the celebrated Priestley, who first tried the action of oxygen on the purple crassamentum of the blood, and endeavoured to establish the identity of the change it undergoes, with that which is produced on venous blood by respiration. The change pro-

duced in the air he regarded as a species of combustion, and considered that the chief use of respiration was to remove phlogiston from the system. Lavoisier, aware that carbonic acid had been discovered by Dr. Black in expired air, concluded that the chemical change in the blood produced by respiration consists principally in the separation of a portion of carbon.

"We are, however," says Dr. Bostock, "under the necessity of modifying, or rather of correcting this conclusion, in consequence of the views which have been taken respecting the changes produced on the air; for besides the conversion of oxygen into carbonic acid, by the abstraction of carbon from the blood, it also appears that a portion of oxygen is, in some way or other, received into the system, and that a mutual interchange of nitrogen is always going forwards between the air and the blood, so that at some times the blood has its proportion of this element absolutely diminished, and at other times increased. With respect to the water which is carried off by the expired air, it is probable that this depends upon evaporation from the surface of the pulmonary cavities; or if any part of it should be secreted from the blood itself as it passes through the lungs, this must be regarded as only indirectly connected with the process of respiration."

After remarking that attempts had been made to prove that venous blood actually contains more carbon than arterial, and that air certainly acquires carbon by being brought into proximity with blood, whilst the latter also obviously undergoes some change, he observes—

"But although the fact be thus established, the manner in which this change is effected is much less easy to comprehend than the nature of the change. Two hypotheses have been formed to account for the operation, each of which is supported by the authority of great names, and by many ingenious arguments, as well as by direct experiment. According to one hypothesis, which may be regarded as that originally proposed by Black, and adopted by Priestley, Lavoisier, and Crawford, the oxygen of the inspired air immediately attracts carbon from the venous blood, the carbonic acid being directly generated by their union. According to the other, the oxygen is absorbed by the blood, is mixed with it, and unites with a portion of its carbon; when the blood, in the course of the circulation, again arrives at the lungs, the carbonic acid that had been formed is discharged, while a fresh portion of oxygen is absorbed. The essential difference between the two hypotheses may be expressed in the following query: are the changes induced by respiration entirely effected in the lungs, or are they brought about in the body at large, the lungs serving merely as the organ by which the substances are absorbed or discharged? The first of these hypotheses has the recommendation of being the most simple, but several objections were urged against it, which gave rise to the more complicated hypothesis that was proposed by La Grange.

"In order to form a judgment of their respective merits, as well as

to complete the theory of respiration generally, it is necessary to inquire into the source of the carbon which is removed from the lungs, and to consider the probable effect which would result from its union with oxygen, according as it may take place in the lungs only, or in the course of the circulation. The first attempt to explain the mode in which the blood acquires its inflammable matter was made by Crawford. He observes that the particles of which the body is composed have a tendency to change, the old ones are perpetually removed, while fresh matter is continually deposited in their room. This gradual interchange of particles is effected by the capillary vessels; the arterial blood conveys nutritious matter to all parts of the body, and employs it in repairing the waste that is necessarily going on, while, at the same time that the blood loses its nutritive particles, it receives the effete or putrescent matter, which is now become useless or even noxious to the system; this is carried by the veins to the lungs, and is there discharged, after being united to oxygen. It is to this change of particles that the difference between arterial and venous blood is ascribed, and it follows, according to this view of the subject, that the matter which is received into the systemic veins contains more carbon than that which is carried off by the arteries, and is employed in the growth and nutrition of the body.

"Crawford's hypothesis possesses much ingenuity; it accords with some well established facts, and seems to afford a simple and natural explanation of them, yet, upon a closer inspection, it would be found to be inadmissible. We have no evidence of the existence of any set of vessels or other apparatus, by which the carbon can enter the veins at their capillary extremities, while there is an obvious source of this matter in the chyle which is poured into them, near their termination in the right side of the heart, immediately previous to the passage of the blood through the lungs. The properties and uses of the chyle will be fully considered hereafter; but I may remark in this place, that there can be no doubt that it is the substance destined for the support of the system, by which the waste of the body is repaired, and materials are furnished for its growth and increase. Hence we are led to the conclusion, that arterial blood becomes venalized, not in consequence of any thing which it receives while it is passing into the veins, but from what it loses in forming the various secretions, or in contributing to the growth and nutrition of the body."

Besides these various opinions we have that of Mr. Ellis, who supposes that the carbon is an excretion produced by the action of the exhalant vessels of the lungs, and does not proceed immediately from the blood. La Grange also has favoured us with the hypothesis that oxygen is absorbed by the lungs, and enters into a *loose combination* with the blood to which it imparts the scarlet colour, and that during the course of the circulation a more intimate union takes place between the oxygen and the carbon, in consequence of which, the blood acquires the ve-

nous character—we find, however, by the experiments of Hassenfratz, that all the appearances of venous blood are after some time acquired by arterial blood, even when it is placed in tubes hermetically sealed, and thus excluded from combination with the constituents of the atmosphere. Hunter also proved that the blood contained in the arteries became venous under certain circumstances. Thus in a portion of the carotid of a dog which was included between two ligatures, the blood was found after some hours to have acquired a complete venous appearance. On this our author has the following sensible observations:—

"And we may farther remark, that even should we consider the observation and experiments of Hunter and Hassenfratz, as proving that the change from the arterial to the venous state may be effected, without any addition ab extra, it does not necessarily follow that the reverse operation can take place, nor indeed have we any evidence that it ever has been accomplished, except by the intervention of oxygen. It is more by other considerations, connected with the changes induced upon the air, or with the part which its constituents perform, either separately or conjointly, when placed in contact with the blood, that we must form our opinion upon this controverted subject.

"And indeed the merits of the question may be rested almost exclusively upon the single point, whether the oxygen which is consumed be exactly replaced by an equal bulk of carbonic acid, the nitrogen remaining altogether passive, or whether there be a surplus quantity of oxygen absorbed by the blood, as well as a reciprocal absorption and exhalation of nitrogen. After duly balancing the facts and arguments that have been advanced on each side of the question, I have been induced to adopt the latter of these opinions, and as a certain degree of absorption of both oxygen and nitrogen appears to take place in the lungs, there is no difficulty in supposing that this is the case with respect to the whole of what is employed in the system; and we shall probably find it to be more consonant to the other operations of the animal economy, to conceive of the union between the oxygen and the carbon being brought about during the course of the circulation, than by a momentary contact in the lungs alone.

"But this opinion does not entirely rest upon our knowledge of the changes which are induced upon the air by its passage through the lungs; we have some very direct and unexceptionable experiments by Dr. Edwards, which may be regarded as proving both the absorption of oxygen and the exhalation of carbonic acid by the pulmonary vessels. Having shown that the air is diminished by respiration, he proceeds to examine whether the diminution depends upon the absorption of oxygen or of carbonic acid, and he determines in favour of the former, because when a small animal is confined in a large quantity of air, and the process is continued for a sufficient length of time, he found that the rate of absorption was greater at the commencement, than towards the termination of the experiment, while at the former period

there must have been an excess of oxygen present, and at the latter an excess of carbonic acid.

"Dr. Edwards's experiments, in proof of the exhalation of carbonic acid by the lungs, are no less ingenious and decisive than those related above. Spallanzani had stated, that when certain animals of the lower orders are confined in gases that contain no oxygen, still the production of carbonic acid is not interrupted; proceeding upon this statement, Dr. Edwards confined frogs in pure hydrogen, in which, by observing the necessary precautions, they are capable of existing for a considerable length of time, while we observe that the action of the lungs is not suspended. The result of this experiment was that carbonic acid was produced, and in such quantity as to show that it could not have been derived from the residual gas in the lungs, being in some cases nearly equal to the bulk of the animal. The same results, although in a less degree, were obtained with fishes, and afterwards with snails, the animals on whom Spallanzani's original observations had been made. He also extended his experiments to the mammalia, by taking advantage of a property which he had found to exist in certain species of newly born animals, of being able to exist, for a short time, without the access of oxygen to their lungs. Kittens of two or three days old were immersed in hydrogen; they remained in this situation for nearly twenty minutes without being deprived of life, when it was found that they had expired a quantity of carbonic acid greater than could possibly have been contained in their lungs at the commencement of the experiment."

It has been a subject of inquiry on which of the constituents of the blood does the air more particularly act? Dr. Bostock is of opinion that it is on the red particles, because they have a peculiar organization, and are the only part of the blood known to possess specific chemical qualities; and moreover, it is by their change of colour that we are enabled to form our judgment respecting the action of the air, although we remain perfectly ignorant of the nature of this action, and know nothing more than that they appear to have a strong attraction for oxygen. We subjoin our author's recapitulation of the general conclusions which have been arrived at on the subject of respiration.

"1. The blood, when it leaves the right side of the heart, is of a purple colour; during its passage through the lungs it is converted into a bright scarlet, and again acquires the purple colour when it arrives at the venous part of the circulation. 2. This change from purple to scarlet is effected by the oxygen of the atmospheric air, which is received into the vesicles of the lungs. 3. The same change of colour may be produced upon the crassamentum of the blood out of the vessels by exposing it to atmospheric air, or still more to oxygen, while, on the contrary, scarlet blood is rendered purple by exposure to hydrogen, nitrogen, or carbonic acid. 4. The blood, in passing ough the lungs, discharges a quantity of carbon, which is ex-

pired in combination with oxygen, under the form of carbonic acid gas. 5. A quantity of aqueous vapour is discharged from the lungs, but this is rather to be considered as the result of secretion or transudation, than as a proper effect of respiration. 6. The blood, in passing through the lungs, absorbs a portion of oxygen, and this appears to be more than what is necessary for the formation of the carbonic acid which is discharged. 7. It is probable that the blood, as it passes through the lungs both absorbs and exhales nitrogen, the proportion which these operations bear to each other being very variable, and depending upon certain states of the system, or upon the operation of external agents. 8. It appears, upon the whole, probable, that the atmospheric air is absorbed by the blood in its whole substance, and that certain proportions of each of its ingredients are discharged or retained according to the demands of the system. 9. We have no proof that hydrogen is discharged from the blood."

To this we shall add, as bearing closely on the point, his opinion regarding the extent of the nervous influence over respiration.

"So far, therefore, as the experiments on the division of the par vagum respects the general question of the influence of the nerves over the respiratory organs, it leads us to the conclusion, that this influence is exercised in an indirect way only, depending upon the intervention of certain circumstances, which affect the respiration in consequence of their not allowing the air and the blood to be brought within the sphere of their mutual action."

We have already intimated, that views of this subject different from those just stated, are entertained by physiologists. There are, in fact, two changes effected on the blood in the lungs, one by which the chyle and lymph poured into the venous system undergo sanguification, the other by which the venous is transformed into arterial blood. These processes have been separated, but without just grounds, since, as remarked by Adelon, they are accomplished at the same instant, in the same organ, and give birth to the same product, that is to arterial blood. This physiologist acknowledges that we know too little of the structure of the lungs, and of the general nature of secretion, to pronounce upon the species of action by which the character of the blood is thus altered. We are ignorant of the mode in which the ramifications of the bronchiæ and of the pulmonary artery terminate upon the origins of the pulmonary veins: and of the relations which may subsist in their capillary divisions, and which may mutually affect these three systems, of which one supplies oxygen, a fluid indispensible to arterialization, another supplies the fluid to be arterialized, and the third carries off the product of this elaboration. But a question arises respecting the share

which the lungs may have in this process. Are they inactive and mere recipients of the fluids, or do they exert over them an organic and vital influence, which is essential to the formation of the new product? To prove the latter of these propositions, Adelon remarks, that no fluid in our economy is produced by the mere apposition and union of its elemental substances, without the interposition of some organ; and that it is not from a mere apposition of venous blood and oxygen that arterialization is effected, since however rich the air may be, even although it be pure oxygen that is inspired—still only the same quantity of this principle disappears. It is also evident that the lungs in different conditions of the body must possess different degrees of vitality, and we find the consumption of oxygen and the arterialization of the blood affected proportionally to the pulmonary condition, as varied in youth or age, in health or sickness. Moreover the experiments, performed by Dupuytren, Provençal, and Dumas, on animals in which after the par vagum had been cut, the blood in the arteries became venous even while oxygen was being inflated into the lungs, seem strongly to favour the opinion of a vital pulmonic influence being essentially necessary to the arterialization of the blood. If it be not so, then this elaborative process must be performed either by a mechanical mixture of the oxygen, chyle, lymph, and venous blood, or it must be the result of a chemical action. It requires no arguments to disprove the former of these propositions, and with regard to the latter we may remark with the author already quoted, that chemists have, in their experiments, judged too rashly of the quality of the blood merely from its colour, since it by no means follows that venous blood has become arterial because it has acquired a brighter red: we know that this effect is produced by the action of carburetted hydrogen, and by several other chemical agents as well as oxygen, and yet no one would imagine venous blood, which had been rendered scarlet by such causes, to have acquired the properties of blood arterialized by the lungs. The chemists in the progress of their theories on this subject have reduced the matter to a species of combustion between the carbon of the blood and the oxygen of the atmosphere, and perceiving that in a purely chemical operation, the fabric of the lungs might actually be burnt where such combustion was perpetually in operation, they have invented ingenious modifications of the process by which they might get rid of such a serious inconvenience as the burning of the retort, but they have only involved themselves in greater difficulties, and created a greater variety of jarring opinions.

Seeing then no grounds for believing this action to be either

mechanical or chemical, it follows that it must be vital or organic, and that the venous blood in the lungs undergoes a species of elaboration similar to what occurs in the formation of other products in different organs of the body. We must at least differ from our author in considering it as purely chemical, although we are ready to admit that the process affords an example of secerning action approaching the most nearly to chemical of any in the system.

We shall transcribe Dr. Bostock's sentiments on another interesting topic connected with respiration, viz. the experiments and opinions of Dr. Barry.

"We are indebted to Dr. Barry, whose observations on respiration I have already had occasion to refer to, for a series of experiments which he performed, in order to prove that absorption depends altogether upon atmospherical pressure. The experiments, which appear to have been sufficiently numerous, and to have been attended with very decisive results, consisted in introducing into a wound a portion of some poison, the effects of which had been previously ascertained, and to compare these with what took place when the pressure of the atmosphere was removed, by the application of an exhausted cupping-glass over the wound. The results appear to have been very remarkable; and in a practical point of view cannot fail to prove of great and obvious utility. The same dose of poison, which under ordinary circumstances destroyed an animal in a few seconds, was rendered completely harmless by the operation of the vacuum; and when the symptoms had commenced, and even when they had proceeded so far as to impress the spectators with the idea that the life of the animal was destroyed, still the vacuum had the effect of speedily and entirely removing them.

"Important, however, as these experiments are in a practical point of view, there appear to me to be certain circumstances which must be taken into account before we can admit of the hypothesis that is deduced from them. In the first place, it would seem that the poison was not simply laid upon the surface, but was inserted into a wound; hence it would be immediately mixed with the blood, and be carried by the veins to the central parts of the system. Now, it is obvious, that when a vacuum is formed over the divided end of a vessel, and especially of a vessel which is supposed to be passive, or to be influenced only by physical causes, the motion of the fluid through this vessel must be retarded. And this would be equally the case, upon whatever principle we supposed the fluid to be propelled, or carried through the vessel in question.

"But it does not necessarily follow that this would be the case in the natural state of the parts, when the vessels remain entire, and the atmospheric pressure is exercised equally upon all the contiguous organs. Nor does it appear to be an obvious consequence of Dr. Barry's experiments, that the same effect would ensue, if we had it in our power to apply a poisonous substance to the extremity of a lacteal or

lymphatic, provided as these vessels are with valves, and exercising a contractile power over their contents. The immediate effect would be the distention of the contiguous parts, and the dilatation of the vessel itself; but, provided the extremity of the vessel remained closed, this operation might promote, rather than retard, the progress of its contents.

"In the last place, I conceive that it is altogether impossible to apply Dr. Barry's principle to the action of the lacteals; they appear to be so far removed from the influence of atmospheric pressure, that we must suppose their contents to be propelled by some inherent power in the vessels themselves, or by some mechanism immediately connected with them; and presuming this to be the case, we have a very strong analogical argument for supposing, that the function of absorption, in the other parts of the system, is conducted upon the same principle."

With this extract, we shall conclude our review, without entering into any other of the subjects discussed in the volume. We shall only remark that the author has employed the same research with regard to these, as he has evinced on the subject of respiration; and has given his own opinions with equal candour and judgment.

QUARTERLY HISTORY

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ANATOMY.

Description of the Arteries of the Human Body *. By Frederick Tiedemann, Professor of Anat. and Physiol. Acad. of Heidelberg. 1 vol. in 4to. containing the Explanation of the Plates, and 4 fascic. in fol. representing the Arteries of every part of the Human Body. Karlsruhe.—1822-24.

The descriptive anatomy of the arteries has been more generally studied, and has attained a higher state of perfection than that of any other division of the vascular system. This circumstance is mainly attributable to their superior importance in a surgical point of view. Not only do they hold a prominent place in our elementary treatises, and occupy a leading share of the student's attention in the dissecting room, but the course of their principal branches is constantly impressed on the mind of the operative surgeon, that he may know how to avoid them with certainty, or to find them with ease; whilst their minute ramifications form an important object of study, from the light they reflect on the pathology of aneurism. Besides several good verbal treatises on arteriology, we possess the elaborate engravings of Haller, Camper, Scarpa, Sœmmering, Loder, Bell, and many others; so that this department of anatomy, so far from presenting any deficiency, seemed scarcely to admit of improvement, and previous to the appearance of M. Tiedemann's work, it was difficult to conjecture in what respect he

* Friederich Tiedemann's Erklærungen Seiner Abbildungen der Pulsadern des Menschlichen Kærpers.

could outdo the labours of his predecessors. To excel them in fidelity of delineation was certainly impossible, and superior elegance of execution was scarcely desirable; but the indefatigable anatomist of Heidelberg has advanced a step nearer perfection, in so far as he has produced a work unquestionably the most *complete* that has hitherto seen the light. All who have preceded M. Tiedemann in this field have contented themselves with representing the usual and common distribution of vessels; he has done much more and much better. He has given accurate descriptions and representations, not only of the regular distributions, but likewise of the most important varieties and anomalous appearances, whether in respect of the form, number, extent, situation, or direction of parts. Hence his work becomes not only an invaluable guide to the surgeon, but likewise an object of interesting study to the student of Pathology. To all who wish to render themselves masters of this important branch of anatomical knowledge, we strongly recommend these magnificent plates as the best substitute for, or accompaniment to, dissection; as well as to those who desire a work of reference, which will never mislead, and seldom leave them at a loss.

"Indocti discant, ament meminisse periti."

New Canals in the Vagina and Uterus.—A curious set of organs belonging to the generative apparatus, which have hitherto escaped the notice of anatomists, have been recently discovered in the cow, by Dr. Gartner, of Copenhagen. He has also found them in the sow. In the cow there are two orifices of considerable size on the inner surface of the vagina, one on each side of, and contiguous to the meatus urinarius. These are the openings of two canals, which run upwards between the coats of the vagina, one on each side, till they reach the level of the mouth of the womb. Here they appear to terminate abruptly in a cul-de sac, or at least beyond this point they cannot be distinctly traced. On the surface of the neck of the uterus, however, they again appear and pursue their course upwards along its cornua, to the distance of one or two inches from the ovaries, when they again terminate abruptly and can be traced no farther. The vaginal portion of these tubes is invariably found. The uterine portion, however, is sometimes altogether wanting, and is subject to great varieties of appearance, the causes of which are altogether unknown. Frequently the uterine portion is found on one side only, and on the other is either wholly wanting, or we observe in the line of its course small granular bodies placed at equal distances from each other, and apparently of glandular structure. Although the

upper and lower portions of these tubes are supposed to be connected through the intervention of a supposed glandular structure, Dr. Gartner has never succeeded in demonstrating any communication by injection, having always found it necessary to throw the quicksilver into each portion separately. In the sow these canals commence by smaller orifices, situated more posteriorly at the sides of the *meatus urinarius*. They pass upwards, and also from within obliquely outwards, between the coats of the vagina, when they lose themselves by minute ramifications in a glandular body of considerable size, of an elongated form, and having considerable resemblance in appearance to the pancreas. The superior part of these canals in the sow is subject to as great variety of appearance as in the cow. They are frequently absent, sometimes much and irregularly contracted, and sometimes part of them is wholly obliterated. When entire they extend themselves into the broad ligament, and terminate apparently in small glandular bodies near the ovaries, with which, however, no connexion has been discovered. It is probable that these organs have some share in the process of conception; but more satisfactory anatomical investigation is required before we are warranted in speculating on their uses. From some passages in the works of several of the older anatomical writers, there is reason to believe they had some imperfect knowledge of these organs.

Olfactory Organs in Fishes.—M. Geoffroy St. Hilaire has recently laid before the Academy of Sciences a Memoir on the organs of smell in fishes. He advances some curious statements, which, should they be confirmed by subsequent observation, acquire additional interest from the confirmation they would afford of Mr. C. Bell's distinction between the functions of the first pair and the nasal branch of the fifth. In the nasal organ of fishes, besides the common covering, M. Geoffroy St. Hilaire describes three distinct parts:—1st, a special vascular system; 2d, a system of nerves derived from the *first* pair; and 3d, a second nervous system derived from the *fifth* pair. The whole of these systems exist equally in animals that respire in the air, but in them they are so intimately blended as to form but one membrane, called the pituitary membrane. Had a similar arrangement been adopted in fishes, the water entering the nasal cavity must have impinged directly on the sentient extremities of the olfactory nerve and destroyed its functions. Nature, however, has provided a security against this. In fishes the cavity is furnished with two distinct openings, which perform the function of nostrils. These openings are so contrived that the fluid can enter only by one of them,

and pass out only by the other. In the greater part of fishes these openings are placed very close to each other. In the conger they are about the distance of an inch ; the first being posterior, the second anterior. All the lower part of the nasal fossa is lined by a network of vessels, which constitute a real immoveable gill, the use of which is to act directly on the air contained in the fluid which comes into contact with it. Like the gills of respiration it absorbs the oxygen of the air which the water holds in solution ; consequently the azote and the odorous particles which were formerly dissolved in the water are liberated. In consequence of their inferior specific gravity, they rise into the superior horn of the nostril, where the expansion of the olfactory nerve is placed, and communicate the sense of smell.

Our readers will perceive that the preceding statement consists partly of an anatomical description of parts, drawn from minute dissections, and partly of inferences, not resting immediately on observation, but indirectly deduced as probable consequences, from the peculiar construction of these organs. We shall be happy to find the ingenious views of M. Geoffroy St. Hilaire confirmed by the researches of other naturalists.

Nerves in the Placenta.—In the last Number of the Philosophical Transactions we find a paper, by Sir E. Home, on the existence of nerves in the placenta. He informs us that the result of his researches on the growth of the chick in ovo, led him to the belief that the growth and increase of arteries depend on the nerves with which they are supplied ; and on the strength of this idea he felt assured of the existence of nerves in the placenta, merely because its arteries attain a large size. To acquire certainty on this point he deputed M. Bauer to inspect with the microscope the placenta of a seal, the arteries and veins of which were injected, and which had been preserved for a long time in spirit of wine. The result of this examination, we are informed, was the discovery of nerves, not only surrounding the umbilical vessels, but also in the uterine portion of the placenta. These nerves, it would appear, are disposed in the form of a net-work around the arterial branches, and which net-work we are assured is obviously distinct from the interlacement of the vessels with each other, and farther, is not continuous with the vascular ramifications. These nervous fibres, when placed on a glass, reflected the light strongly, and had some resemblance to shining white hairs; finally, we are informed each of them consists of a chain of minute globules.

Anatomists have been so often led astray by microspical appearances that we have good reason to distrust the accuracy of these observations, or at least to suspend our judgment till some

evidence of a more satisfactory nature than that offered by Sir E. Home be adduced. He has also omitted to shew the origin of these nerves, or to trace their connexion with the nerves of the mother and the fœtus, which leaves a considerable hiatus in the proof, and renders the announcement of the discovery somewhat premature. One thing is clear; the theoretical view which led Sir E. Home to these researches is fallacious; for was the power of arteries to enlarge themselves connected with the supply of nerves, the placenta, whose arteries enjoy this power in a greater degree than perhaps those of any other part of the body, would have a correspondingly large share of nerves, and we would not require the aid of microscopes to discover them.

M. Breschet *on a New Species of Extra-uterine Conception.*—M. Breschet has recently published a Memoir, describing a variety of extra-uterine pregnancy, which has not hitherto been noticed in England or France. It is distinguished by the fœtus being detained in the *parenchyma* of the *uterus*. It is surrounded by a cyst, which M. Breschet supposes to be similar in nature to the cysts formed around foreign substances introduced into other parts of the body. Between this cyst and the cavity of the uterus, or that of the abdomen, no communication could be traced. M. Breschet terms this variety "*Graviditas in Uteri Substantia.*" He has given a very minute description, and several views of the parts. We believe there are only three other cases on record, all of which occurred in Germany. The first is detailed in the Memoirs of the Josephine Academy of Vienna, Vol. I. by Professor G. Schmith; the second is described by M. Hedrick, and an engraving of the preparation has been published by Professor Carus, of Dresden; and the third, which is posterior to M. Breschet's case, occurred to Dr. Albers, of Bremen. In all these cases the fœtus gradually found its way into the abdomen, exciting fatal inflammation. It was also observed, that in each of these cases the *membrana decidua* was fully formed in the uterus, even although the Fallopian tubes were closed; from which it is inferred that this membrane belongs not to the *ovum* but to the *uterus*.

Preternatural Septum in the Uterus.—An instance of this curious malformation has been communicated to the Medical Society at Angers, by Drs. Jumet and Garnier. The woman in whom itwas observed had died about the age of 35, of peritonitis, soon after her fifth labour. Her preceding labours had been natural, excepting the first, which required the employment of instruments. Her last labour occurred in December, 1824.

There appeared to be an obliquity of the uterus towards the right side. The pains had no effect in dilating the os uteri, and ultimately the fœtus was extracted by the forceps through a rupture that took place spontaneously near the pubis. Inflammation of the peritoneum supervened, and proved fatal on the third day. On examining the uterus, it appeared externally to be divided into two lobes, which corresponded with two distinct internal cavities, one on each side. They communicated, laterally, with a common neck. The right lobe, which was placed more anterior, and very obliquely, was the largest, and had evidently contained the last fœtus. At its lower part it presented a transverse rupture, through which the fœtus had passed into the vagina. The vagina was single, and there was only one broad ligament, with one artery and Fallopian tube attached to each lobe. It was supposed that the first four children had been contained in the left lobe, the position of which being much less oblique than that of the right, permitted an easy delivery. A rupture of the bladder was also discovered. This malformation has been erroneously styled *a double uterus*. There is a preparation of a similar case in John Hunter's Museum.

Dr. Hastings' *Description of a Monster, in whom the Upper and Inferior Extremities were entirely wanting* *.

"This child was born alive, in April, 1824. The mother, Charlotte Rawlins, is about 36 years of age, and had previously borne three perfect children. She went beyond the usual period of gestation, and says she never felt any motion in her womb, as in former pregnancies. The father is a robust man, between 60 and 70.

"*Head.*—There is a great quantity of black hair on the head, and the bones are more perfect than they are usually found at birth. The nose is very prominent, and there is a red mark upon it, which extends to the upper lip. The fontanelles are rather small.

"*Trunk.*—The spine appears perfect, and so are the ribs. All the bones seem harder than they usually are at birth. There is a clavicle and scapula on each side, with muscles attached, which move the scapulæ freely. There is an acromion to each scapula. The glenoid cavities are absent.

"The clavicle is united, as usual, to the sternum and acromion. The sternum is natural.

"*Pelvis.*—The sacrum and os coccygis are natural. Ossa innominata appear perfect in every respect, excepting the acetabulum, which is wanting. On the right side there is not the least attempt at the

* Edinburgh Medico-Chir. Trans. Vol. II.

production of a lower extremity; but on the left side, at the part of the ossa innominata, into which the head of the thigh-bone is generally received, there is a little process in the shape of a finger, consisting of two small bones united by ligaments, and covered with skin and cellular membrane. This projection apparently has muscles attached to it, as it is constantly moved by the cries or struggles of the child. The projection is thick at the base, and runs to a point, and there is a nail affixed to it. The length of the projection is $1\frac{8}{10}$ inches. The child cries loudly. It is fed, as the mother cannot suckle it.

"*April* 12, 1824.—I have this day again seen the child, and find it grown and looking healthy. The mother is now able to suckle it.

"*October* 20, 1824.—The desire of the parents to derive pecuniary advantage, by exhibiting this monstrous production, has proved fatal to it. They carried the child to most of the towns in this neighbourhood, and exhibited it to many hundred persons. In one of these excursions, inflammation of the lungs came on, and the child died about three weeks since, after a few days illness.

"I have searched such writers as I have been able to refer to, particularly Heister, Ambrose Parey, the article Monster in the Encyclopædia Londinensis, and Mr. Lawrence's paper in the 5th volume of the Medico-Chirurgical Transactions; and although I find an infinite variety of cases, in which the members were extravagantly out of proportion, both on the side of defect and excess, I have met with none in which the upper and lower extremities were entirely absent."

Dr. Granville's *Dissection of a Female Egyptian Mummy.*—This singular relic of antiquity having excited much curiosity, we think a short account of it may not be unacceptable to our readers. It was in a state of more perfect preservation than any hitherto brought to this country. It was enveloped in a multitude of bandages, which appeared to have been soaked in some astringent vegetable solution. The Egyptian priests appear to have been familiar with all the modes of bandaging subsequently employed in surgery. "There is no species of bandage," says Dr. Granville, "which ancient or modern surgery has devised, described, or employed, that did not appear to have been used in securing the surface of the mummy from the external air; we here meet with the *couvre-chef*, the *scapularium*, the eighteen-tailed bandage, the T. bandage, as well as the *linteum scissum* and *capistrum;*" and he adds, that they were applied with a neatness and precision that would baffle the imitative power of the most adroit surgeon of the present day; an eulogium which, however, is qualified by the consideration that the bandages were made of elastic materials, and therefore required no unusual skill to adapt them accurately to the surface of the body. The cuticle was found everywhere wanting, except at the points of the toes and fingers. Dr. Granville supposes it to have been

removed by means of lime, as a preparatory step to tanning. The surface was dry and shrivelled, and of a dark brown colour, and the skin, which Dr. Granville asserts to have been tanned, was generally pretty firm and resisting; but on the inner surface of the thighs and other parts where there are large masses of flesh, it was soft and yielding. The external parts of generation were easily recognized, and the mammæ, which reached as low as the seventh rib, shewed even the nipples and areolæ. The head had been shaved, and the scalp exhibited an eruption which was determined to be the "*Porrigo decalvans!*" The brain and membranes were found to have been removed through the nostrils. On opening the chest, its organs were found in their natural situation. Of the abdominal viscera, the liver, the greater part of the alimentary canal, and one of the kidneys had been removed. Several earthy masses were found in the abdomen, which, Dr. Granville conjectures, may have been formed by the mud contained in the waters of the natron lakes, in which there is reason to believe the body had been immersed. The pelvis was the seat of extensive disease; the right ovary and broad ligament were enveloped in a mass of diseased structure, whilst the Fallopian tube of the same side was perfectly sound and beautifully preserved; and on the left, the contracted remains of an ovarian sac were distinctly visible. Hence Dr. Granville concludes she must have died of diseased *ovaria*. The muscles and connecting cellular tissue were in a state of astonishing preservation. They were pliant and soft, and could be separated by dissection with as much facility as in a recent body. The joints were flexible; so that others as well as M. Cloquet would appear to have understood the art of preparing flexible skeletons. Dr. Granville argues, that this female must have died between the age of fifty and fifty-five, after bearing children, because, first, there were no marks of decrepitude; and, secondly, because he observed that peculiar thinning of the central portion of the *ossa ilia* which M. Chaussier has signalized as occurring at the above age in women who have borne many children. In its exterior figure and size the body resembled the Caucasan or European race, confirming the opinion of Cuvier, who, from the inspection of the heads of various Egyptian mummies, concludes that people to have been of Caucasan extraction. The facial angle of the head is nearly a right angle. Chrystals of salts were found on every part of the body, both external and internal; they consisted of the nitrate of potash, muriate, sub-carbonate, and sulphate of soda, with a small proportion of lime. The opinion formed by Dr. Granville respecting the process by which this body was embalmed is, that the

brain having been first extracted by the nostrils, and the intestines removed by the anus, the cuticle was destroyed by quicklime, and the whole body steeped in a mixture of bees wax and resin, kept melted during several days; that it was next immersed in a solution of the salts enumerated above, and consisting, probably, of the water of the Natron lakes; and that, lastly, the skin was tanned by some vegetable astringent, with which, also, the bandages were impregnated. Dr. Granville has imitated the process on the body of a still-born fœtus, and has succeeded in producing the fac-simile of an Egyptian mummy, which bids fair to rival the original; for he informs us that it has been kept for three years without exhibiting the slightest trace of decay.

SOEMMERING *on the Anatomy of the Human Stomach* *.—"Soon after the new edition of my programme on the corporeal difference between the Negro and the European, Mr. Billmann, in Cassel, drew my attention to the fact, that, in respect to the stomach, there is also a great difference between these two races of mankind. The form of the stomach altogether appears, in the Negro, rounder, or at least shorter, than in the European. If we compare, in the natural state, the stomach of a Negro, fourteen years old, and of an European girl of twelve years, we observe this difference, particularly at that part commonly called its *cul de sac*. This blind sac is evidently more globular in the negro, and above the junction of the œsophagus, more convex than in the European. A similar but still more remarkable roundness of the stomach may be observed in the stomach of apes, and which may be seen in Daubenton's excellent plates to Buffon, just as it is found in the natural state. Thus, also, in the form of one of the most essential organs, namely, that of the stomach, the negro appears more to resemble the ape than is the case with the European. I am not aware that any one has noticed this difference before myself. Neither Charles White, in his "*Account of the regular gradation in Man*," nor William Lawrence, in his "*Lectures on Physiology, Zoology, and the Natural History of Man*," which, up to the present time, is the most perfect work on the differences of the human race, have touched this subject. Whether this remarkable difference can be looked upon as a proof in support of the opinion of several natural historians, which is every day gaining more ground, viz. that mankind must have arisen from more than one original stock, and in what respect I shall, therefore, be obliged to change the opinion which I have before given, I will for the present pass by. But I must here formally protest against this new discovered corporeal difference being used as a plea in behalf of the cruel treatment which the Europeans continue to inflict on the Negroes.

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* Trans. from Mem. of Bavar. Acad. of Scien.; in Edin. Med. and Surg. Journ. No. 88. for July, 1826.

"Another observation on the human stomach regards the description given by Sir E. Home, of the contraction in the centre, which appeared to him so remarkable, that he therefore divided the stomach into the pyloric and the œsophageal halves. It is quite true that this contraction in the stomach is met with, as Meckel has mentioned, and which I have often observed myself. But as this appearance, as well as I recollect, only shows itself in the female subject, and as Home has drawn it from one female body only, I regard it as immaterial, or at least deviating slightly from the usual state. I am greatly mistaken if it is not the effect of the tight lacing, particularly from the pressure of the breast bone of the stays; for such a bone, laced only moderately tight, presses just on the middle of the stomach, so as to divide it into two parts. This machine, made either of wood, bone, or steel, works like every other mechanical irritation applied to any part of the living viscera. This must also be much more the case in the female stomach, as I have already remarked in my Splanchnology, as it is distinguished by its length from the broad roundness of the male stomach. But if such a contraction of the stomach belonged to its natural state, there must be a disposition to it, at least in some degree, apparent in the stomachs of children, in which, however, not the slightest trace of it is to be found.

"The third observation on the human stomach concerns its lower end, or the *pylorus*. On examining the proper opening of the pylorus, which is most readily and easily done when the stomach is dry, and has been moderately distended with air, it generally appears more or less elliptical, seldom circular, consisting of a ring, occupied by concentric circles, which are different both as to their size and the direction which they take. Sometimes the pylorus, that is, the fold or ring which forms it, is broadest at the posterior surface of the stomach, and towards the anterior surface is narrowed in the form of a projecting fold. The longest diameter of this opening extends obliquely from before backwards; the smallest diameter, on the contrary, from above, downwards, or from the right to the left side, or the lesser to the larger curvature. Sometimes the ring of the pylorus is, on the whole, remarkably broader, and its opening somewhat smaller. It has, therefore, its greatest breadth on the smaller, and the largest on the greater curvature. Its elliptical opening appears with its longest diameter between the larger and less curvatures, with its smallest diameter, on the contrary, from behind forwards, or in the direction between the anterior and posterior surface of the stomach. Sometimes the ring of the pylorus is broader, and its opening proportionally smaller; then its greatest breadth is not on the small, but on the greater curvature, and the longest diameter of its opening extends, not from the right to the left, but from the anterior to the posterior surface of the stomach. Sometimes the ring of the pylorus is, proportionally to the size of the stomach, very broad, and its opening, at the same time, very small. Between these three or four remarkable differences in the form of the pylorus, its other varieties may be properly classed; but as we have an excellent monography

on this subject from Leveling, and a good description of this part from Haller, I will confine myself to the notice of a construction of the pylorus which was first discovered by one of my pupils, Scheuzer. This is a ring or circle of glands contained in the fold of this part, which, on the careful removal of the peritoneum and cellular membrane, may be shown. I have had the honour of showing this ring to the Academy, both in the natural state, and in two engravings. The natural size, the peculiar form, the true situation, the peculiar connexion, as well as the line of demarcation marked out by it between the end of the stomach and the commencement of the duodenum, may be best seen in a preparation which has been kept in spirits of wine, and will then be so clear as to supersede, now, on my part, a more detailed description. F. Magendie distinguishes in the stomach *la partie splenique* and *pylorique*. At the pylorus, he says, the mucous membrane forms a circular fold, called the *pyloric valve*, and that a fibrous dense tissue is found between its plates, called by some authors the *pyloric* muscle. This valve of the pylorus serves both to prevent the return of the matter contained in the duodenum in the stomach, as well as to keep the food and chyme in this viscus."

PHYSIOLOGY.

Case of a Lady born Blind, who received Sight at an advanced age, by the formation of an Artificial Pupil. By JAMES WARDROP, Esq. F.R.S. Edin. Surgeon Extraordinary to the King, &c. Read before the Royal Society, 15th June, 1826.

The following narrative, recently communicated by Mr. Wardrop to the Royal Society will be read with much interest. Our readers will perceive from the title that it is analogous to Cheselden's celebrated case of the blind boy, but it is more complete and satisfactory. It is the only other case of the kind on record. As such opportunities of prying into Nature's secret operations, and as it were detecting her in the very act of combining the various ingredients which compose our faculties, are of rare occurrence, we deem it fortunate that this valuable case should have occurred to a surgeon so capable of rendering it available in the proper way, as Mr. Wardrop, who to the qualifications of the skilful ophthalmic surgeon, adds those of the able philosopher. Although it furnishes matter for much interesting comment, we are compelled to limit ourselves to a narration of the facts, which cannot be given better than in the words of the original.

" As imperfections in the original structure of our organs of sense, which are remediable by art, are extremely rare, and as cases of suc-

cessful operations on these organs essentially contribute to illustrate their functions, as well as to throw light on the operations and development of the human mind, the following instance of vision being imparted to a lady born blind, by an operation at an advanced period of life, will, it is hoped, not be considered unworthy of being submitted to the consideration of the Royal Society.

"The case, besides establishing the curious physiological fact, that the nerve of the eye can remain fit to receive the impressions of external objects, though totally excluded for a long series of years from the performance of that function, claims a much higher interest in a philosophical point of view; some of the facts here detailed confirming in a remarkable manner what Berkeley had predicted of "a man born blind made to see," in the 79th Section of his "New Theory of Vision," published in the year 1709. He says, "a man born blind being made to see, would, at the first opening of his eyes, make very different judgments of the magnitude of objects intromitted by them from what others do. He would not consider the ideas of sight with reference to, or as having any connexion with the *idea* of touch." It may also be observed, that in the present case the blindness was more complete, and the period at which vision was acquired was much later in life than in any instance which has hitherto been recorded.

"The lady, whose case forms the subject of this paper, was observed, during the first months of her infancy, to have something peculiar in the appearance of her eyes, and an unusual groping manner, which made her parents suspect that she had defective vision. When about six months old, she was placed under the care of a Parisian oculist, who performed an operation on both her eyes, with a view to afford her sight. The operation on the right eye was, however, followed by violent inflammation, and a collapse of the eye-ball, thus causing a complete destruction of the organ of vision. The operation on the left eye, though equally unsuccessful in attaining its object, was not followed by any alteration in the form and size of the globe. From the account stated by her friends, it was impossible to form any correct notion of the state of her eyes previous to the operations which were performed. It seems, however, extremely probable that the blindness, which was attempted to be remedied, had been produced by congenital cataracts, and that these operations had for their object the removal of the opaque lenses.

"From the above early period she had continued totally blind, being able merely to distinguish a very light from a very dark room, but without the power to perceive even the situation of the window through which the light entered; though in sunshine or in bright moonlight, she knew the direction from whence the light emanated. With regard therefore to the degree of sight, this lady was more completely blind than the boy in the celebrated case related by Mr. Cheselden, in the 35th volume of the Transactions of the Royal Society; for in that instance the boy knew black, white, and scarlet apart from one another; and when in a good light he had that degree of sight, which generally continues in an eye affected with cataract; whereas in this lady, the pupil

being completely shut up, no light could reach the retina, except such rays as could pass through the substance of the iris.

" When she was placed under my care she had reached her 46th year. The right eye-ball was collapsed, but the left retained its natural globular form. The cornea of this eye was transparent, except at one point near its circumference, where there was a linear opacity, which had probably been the cicatrix of the wound made during the operation in her infancy. The anterior chamber of the eye was of its natural capacity, but I could not distinguish any vestige of a pupil, some streaks of yellow lymph being deposited in an irregular manner over the central part of the iris. There was every reason to believe that the retina was sound; for though she could not perceive objects, nor had any notion of colours, yet the circumstance already mentioned of her being able to distinguish between a very light aud a very dark chamber, and between a gloomy day and a sunshine, rendered it probable that the nerve was in a sound and natural state. Under this impression, I thought that the restoration of her sight by making an artificial pupil was practicable, and certainly well worthy of a trial. Accordingly, on the 26th of January, I introduced a very small needle through the cornea, passing it also through the centre of the iris; but I could not destroy any of the adhesions which had shut up the pupillar opening. After this operation she said she could distinguish more light, but she could perceive neither forms nor colours. The result of this first attempt justified the favourable views entertained of the state of the retina, and Mr. Lawrence, who at this time was consulted, coincided with me in this opinion.

" On the 8th of February a second operation was performed, which consisted in passing a sharp edged needle through the sclerotica, bringing its point through the iris into the anterior chamber, repassing it into the posterior chamber at a small distance, and then dividing the portion of iris thus included between the two perforations of the needle. Only a very slight inflammation followed—the light became offensive to her—she complained of its brightness, and was frequently observed trying to see her hands; but it was evident her vision was very imperfect; for although there was an incision made in the iris, some opaque matter lay behind this opening, which must have greatly obstructed the entrance of light.

" On the 17th of February a third operation was performed, which consisted in still further enlarging the opening in the iris, and in removing the opaque matter, by a needle introduced through the sclerotica. This was followed by a very slight degree of redness. The operation being performed at my house, she returned home in a carriage, with her eye covered only with a loose piece of silk, and the first thing she noticed was a hackney coach passing, when she exclaimed, " What is that large thing that has passed by us ?" In the course of the evening she requested her brother to show her his watch, concerning which she expressed much curiosity, and she looked at it a considerable time holding it close to her eye. She was asked what she saw, and she

said there was a dark and a bright side; she pointed to the hour of 12, and smiled. Her brother asked her if she saw any thing more? she replied, "Yes," and pointed to the hour of 6, and to the hands of the watch. She then looked at the chain and seals, and observed that one of the seals was bright, which was the case, being a solid piece of rock crystal. The following day I asked her to look again at the watch, which she refused to do, saying, that the light was offensive to her eye, and that she felt very stupid; meaning that she was much confused by the visible world thus for the first time opened to her. On the third day she observed the doors on the opposite side of the street, and asked if they were red, but they were in fact of an oak colour. In the evening she looked at her brother's face, and said that she saw his nose; he asked her to touch it, which she did; he then slipped a handkerchief over his face, and asked her to look again, when she playfully pulled it off, and asked, "What is that?"

"On the sixth day, she told us that she saw better than she had done on any preceding day; "but I cannot tell what I do see; I am quite stupid." She seemed indeed bewildered from not being able to combine the knowledge acquired by the senses of touch and sight, and felt disappointed in not having the power of distinguishing at once by her eye, objects which she could so readily distinguish from one another by feeling them.

"On the seventh day she took notice of the mistress of the house in which she lodged, and observed that she was tall. She asked what the colour of her gown was? to which she was answered, that it was blue; "so is that thing on your head," she then observed; which was the case: "and your handkerchief, that is a different colour;" which was also correct. She added, "I see you pretty well, I think." The teacups and saucers underwent an examination: "what are they like?" her brother asked her. "I don't know," she replied; "they look very queer to me; but I can tell what they are in a minute when I touch them." She distinguished an orange on the chimney piece, but could form no notion of what it was till she touched it. She seemed now to have become more cheerful, and entertained greater expectation of comfort from her admission into the visible world; and she was very sanguine that she would find her newly acquired faculty of more use to her when she returned home, where every thing was familiar to her.

"On the eighth day, she asked her brother, when at dinner, "what he was helping himself to?" and when she was told it was a glass of port wine, she repiled, "port wine is dark, and looks to me very ugly." She observed, when candles was brought into the room, her brother's face in the mirror, as well as that of a lady who was present; she also walked, for the first time without assistance, from her chair to a sofa which was on the opposite side of the room, and back again to the chair. When at tea, she took notice of the tray, observed the shining of the japan work, and asked "what the colour was round the edge?" she was told that it was yellow; upon which she remarked, "I will know that again."

"On the ninth day she came down stairs to breakfast in great spirits; she said to her brother, "I see you very well to-day;" and came up to him and shook hands. She also observed a ticket on a window of a house on the opposite side of the street ("a lodging to let"); and her brother, to convince himself of her seeing it, took her to the window three several times, and to his surprise and gratification, she pointed it out to him distinctly on each trial.

"She spent a great part of the eleventh day looking out of the window, and spoke very little.

"On the twelfth she was advised to walk out, which recommendation pleased her much. Mr. —— called on her, and she told him she felt quite happy. Her brother walked out with her as her guide, and took her twice round the piazzas of Covent-garden. She appeared much surprised, but apparently delighted; the clear blue sky first attracted her notice, and she said "it is the prettiest thing I have ever seen yet, and equally pretty every time I turn round and look at it." She distinguished the street from the foot pavement distinctly, and stepped from one to the other like a person accustomed to the use of her eyes. Her great curiosity, and the manner in which she stared at the variety of objects, and pointed to them, exciting the observation of many by-standers, her brother soon conducted her home, much against her will.

"On the thirteenth day nothing particular took place till tea-time, when she observed that there was a different tea-tray, and that it was not a pretty one, but had a dark border; which was a correct description. Her brother asked her to look in the mirror, and tell him if she saw his face in it? to which she answered, evidently disconcerted, "I see my own; let me go away."

"She drove in a carriage, on the fourteenth day, four miles on the Wandsworth road; admired most the sky and the fields, noticed the trees, and likewise the river Thames as she crossed Vauxhall bridge. At this time it was bright sunshine, and she said something dazzled her when she looked on the water.

"On the fifteenth day, being Sunday, she walked to a chapel at some distance, and now evidently saw more distinctly, but appeared more confused than when her sight was less perfect. The people passing on the pavement startled her; and once when a gentleman was going past her, who had a white waistcoat and a blue coat with yellow buttons, which the sunshine brought full in her view, she started so as to draw her brother, who was walking with her, off the pavement. She distinguished the clergyman moving his hands in the pulpit, and observed that he held something in them; this was a white handkerchief.

"She went in a coach, on the sixteenth day, to pay a visit in a distant part of the town, and appeared much entertained with the bustle in the streets. On asking her how she saw on that day? she answered, "I see a great deal, if I could only tell what I do see; but surely I am very stupid."

"Nothing particular took place on the seventeenth day; and when her brother asked her how she was? she replied, "I am well, and see better; but don't tease me with too many questions, till I have learned a little better how to make use of my eye. All that I can say is, that I am sure, from what I do see, a great change has taken place; but I cannot describe what I feel."

"Eighteen days after the last operation had been performed, I attempted to ascertain by a few experiments, her precise notions of the colour, size, forms, position, motions, and distances of external objects. As she could only see with one eye, nothing could be ascertained respecting the question of double vision. She evidently saw the difference of colours; that is, she received and was sensible of different impressions from different colours. When pieces of paper one and a half inch square, differently coloured, were presented to her, she not only distinguished them at once from one another, but gave a decided preference to some colours, liking yellow most, and then pale pink. It may be here mentioned, that when desirous of examining an object, she had considerable difficulty in directing her eye to it, and finding out its position, moving her hand as well as her eye in various directions, as a person when blindfolded, or in the dark, gropes with his hands for what he wishes to touch. She also distinguished a large from a small object, when they were both held up before her for comparison. She said she saw different forms in various objects which were shown to her. On asking what she meant by different forms, such as long, round and square, and desiring her to draw with her finger these forms on her other hand, and then presenting to her eye the respective forms, she pointed to them exactly; she not only distinguished small from large objects, but knew what was meant by above and below; to prove which, a figure drawn with ink was placed before her eye, having one end broad, and the other narrow, and she saw the positions as they really were, and not inverted. She could also perceive motions; for when a glass of water was placed on the table before her, on approaching her hand near it, it was moved quickly to a greater distance, upon which she immediately said, "You move it; you take it away."

"She seemed to have the greatest difficulty in finding out the distance of any object, for when an object was held close to her eye, she would search for it by stretching her hand far beyond its position, while on other occasions she groped close to her own face, for a thing far removed from her.

"She learned with facility the names of the different colours, and two days after the coloured papers had been shewn to her, on coming into a room the colour of which was crimson, she observed that it was red. She also observed some pictures hanging on the red wall of the room in which she was sitting, distinguishing several small figures in them, but not knowing what they represented, and admiring the gilt frames. On the same day, she walked round the pond in the centre of St. James's square, and was pleased with the glistening of the sun's

rays on the water, as well as with the blue sky and green shrubs, the colours of which she named correctly.

"It may be here observed, that she had yet acquired by the use of her sight but very little knowledge of any forms, and was unable to apply the information gained by this new sense, and to compare it with what she had been accustomed to acquire by her sense of touch. When, therefore, the experiment was made of giving her a silver pencil case and a large key to examine with her hands, she discriminated and knew each distinctly; but when they were placed on the table, side by side, though she distinguished each with her eye, yet she could not tell which was the pencil case and which was the key.

Nothing farther occurred in the history of this lady's case worthy of notice, till the twenty-fifth day after the operation. On that day she drove in a carriage for an hour in the Regent's Park, and on her way there seemed more amused than usual, and asked more questions about the objects surrounding her, such as "what is that?" it is a soldier, she was answered; "and that, see! see!" these were candles of various colours at a tallow chandler's window. "Who is that, that has passed us just now?" it was a person on horseback: "but what is that on the pavement, red?" it was some ladies who wore red shawls. On going into the park, she was asked what she saw particularly, or if she could guess what any of the objects were. "Oh yes," she replied, "there is the sky; that is the grass; yonder is water, and two white things;" which were two swans. On coming home along Piccadilly, the jewellers' shops seemed to surprise her much, and her expressions made those around her laugh heartily.

"From this period till the time of her leaving London on the 31st of March, being forty-two days after the operation, she continued almost daily to gain more information of the visible world, but she had yet much to learn. She had acquired a pretty accurate notion of colours, and their different shades and names; and when she came to pay me a farewell visit, she then wore a gown, the first of her own choice, with the light purple colour of which she seemed highly gratified, as well as with her cap, which was ornamented with red ribbons. She had not yet acquired any thing like an accurate knowledge of distance or of forms, and up to this period she continued to be very much confused with every object at which she looked. Neither was she yet able, without considerable difficulty and numerous fruitless trials, to direct her eye to an object; so that when she attempted to look at anything, she turned her head in various directions until her eye caught the object of which it was in search. She still entertained, however, the same hope which she expressed soon after the operation, that when she got home her knowledge of external things would be more accurate and intelligible, and that when she came to look at those objects which had been so long familiar to her touch, the confusion which the multiplicity of external objects now caused, would in a great measure subside."

Versuche ueber den Uebergang von materien in den Harn.—Abstract of Experiments on the passage of certain substances into the urine. By Dr. WÖHLER *.

Indigo.—Messrs. Tiedemann and Gmelin found in a horse who had taken a pound of the sulphate of indigo neutralized with potass, the urine changed into a greenish blue. M. Wohler observed the same thing in a dog.

Rhubarb.—It is pretty well known that rhubarb yellows urine, and that it reddens when potass is added. This fact has been ascertained by Tiedemann and Gmelin, Home, and Westrumbs; the latter found his urine to be changed ten minutes after the ingestion of the substance. Bradner Stuart experienced the same result from a rhubarb bath. The red beet-root tinges the urine red; the root of the cheledonium magnum (*celandine*) produces a yellow colour, very well marked; and so does gamboge. Reil, in his *Fieberlehre*, maintains, that sheep who have made use of the *ciscus laurifolius*, emit red urine; and, according to Wildenow, the same thing occurs from using the greater number of the *cacti.*

If we mix an acid with the urine of those who have eaten myrtle berries, we will often find the clear reddish colour of wine. This is exactly what takes place when the juice of the *vaccinium myrtillus* is treated with an acid or an alkali. The uric acid which is precipitated from these kinds of wine, has always more or less of the colouring principle of the myrtle. We have the same results from black cherries and mulberries. Damas, prunes, and cassia nigra have also the same effect.

Odorific Organic Principles.—Every one knows what effect the oil of turpentine produces on the urine of men and animals, whether it be taken internally or applied to the skin. M. Wohler thinks that the violet odour is neither more nor less than the ordinary odour of urine, mixed with a very small quantity of oil of turpentine. Nevertheless, it has not been possible to produce this effect by the mixture of these two substances. This, he thinks, is owing to the imperfect mixture; which is, however, completely effected in the kidneys. Juniper berries, it is said, also communicate the odour of violets to the urine.

John says that the urine of those who make use of valerian emits a smell like that of myrrh; he even pretends that castoreum, opium, assafœtida, and saffron give, each its peculiar odour. The effect of asparagus on the urine is well known. The herba jaceae (*violette tricolore*) gives to the urine of those who take it the smell of a cat's urine.

Narcotic Principle.—The use which the inhabitants of Kamschatka make of a certain mushroom (*a. muscarius*) is well known. What is very remarkable, the urine is said to possess the same intoxicating qualities as the mushroom, and even in a higher degree. Langsdorff asserts that these people treasure up this urine which they use for intoxication! Nay, he maintains that certain individuals gather the urine of others, and that the effect produced, like the perpetual pills, goes to

* Zertchrift für die physiologie. No. 2. 1825.

the fourth or fifth individual! The case of a young girl, recorded by Bachetoni, who emitted oil with her urine, after having taken the oil of sweet almonds three days previous, is here noticed by the author.

Morbid matters formed in the body, and secreted with the urine.

Albumen.—In dropsies this substance is often found in the urine. As soon as the collections of water disappear, however, the albumen is no longer to be found.

Chyle.—The ancients spoke sometimes of chylous and gelatinous urines. Prout has proved that their opinions were not altogether incorrect. In cases of dropsy occasionally, and frequently in the *morbus maculosus hæmorrhagicus* of Werchof, blood has been observed. As to the observations on bile, the experiments of Orfila are well known; and with regard to diabetes, the sugar that is found in the urine is sufficient to prove that it can be formed in the body.

Of Substances, the passage of which into the urine is doubtful, and of Substances which do not enter.

Carbonic Acid.—M. Wohler coincides with the opinions of Marcet and against those of Vogel, Prout and Brande; which is, that this acid does not pass into the urine. That the quantity which is found is only the quantity that was in the blood itself. He thinks that he is able to affirm this fact from experiments made on himself.

Iron.—Direct experiments have convinced the author that this metal passes into the urine. Lead and bismuth never enter, neither do cochineal nor turnsol.

Mercury and Camphor.—Mercury was not found by the author. His opinion is opposed to Cantu's, and coincides with Gmelin's and Tiedemann's. Camphor, concludes the author, is never evacua ted by the kidneys, but by the lungs and skin.

PART II.—*Physiological Conclusions.*

1. The following substances have not been found in the urine. Lead, alcohol, sulphuric ether, camphor, the animal oil of Deppel, musk, cochineal, turnsol, and carbonic acid.

2. The following substances have been found, but decomposed. Hydro-cyanate of potass, and deutoxide of iron, are changed into hydro-cyanate of potass and protoxide of iron. Tartrates, citrates, malates, acetates of potash and soda, are changed into carbonates. Hydro-sulphate of potass is changed into sulphate of potass.

3. The substances which enter into new combination with the substances they find in the body, and are evacuated by the kidneys. Sulphur is changed into sulphuric and hydro-sulphuric acids. Iodine into a hydro-oxate, oxalic, tartaric, gallic, succuric, and benzoin acid, are found in combination with an alkali.

4. The substances which pass into the urine without decompositions, are the carbonate, chlorate, nitrate, and sulphate of potass. Hydro-sulphate, and hydro-cyanate of potass. Protoxide of iron, borate of soda, muriate of barytes, silicate of potass, tartrate of nickel and potass. Many colouring matters, such as those of the sulphate of

indigo, gamboge, madder, logwood, beet-root, mulberries, and cherries. Many of the odoriferous principles, partly altered however, such as the oil of turpentine, the odoriferous principle of the juniper berries, valerian, assafœtida, garlic, castoreum, saffron, and opium. The narcotic principle of the *fausse oronge*, and, in the morbid state, thickish oil.

The first set of substances are either destroyed, altogether altered by the process of chylification and sanguification, or they are used for nutrition, or evacuated by other organs. Some of them are made insoluble and incapable of being absorbed.

The substances belonging to the second class are oxidized either by animal matter, or in consequence of respiration; such as the hydrosulphate of potass. This last effect probably takes place in the vegetable alkalies, which are changed into carbonates in the blood. That it does take place in the blood, M. Wohler thinks he is entitled to conclude from certain experiments that prove it does not take place in the stomach.

Of the third class it is probable that uncombined acids do not pass into the urine unless they are given in very great doses. This fact appears to be confirmed by the experiments of Magendie and Berzelius.

Although the urine is not more acid than it usually is, it ought not to be concluded that the acid has not entered into the urine. This proves the inefficacy of small doses of acids in dissolving calculi.

Many of those substances which pass into the urine without alteration are diuretic. Thus it may be said that those substances which augment the secretion of the urine, are able to pass into the urine.

M. Wohler concludes from what has preceded, that all the substances which are soluble in the liquids of the body, that are not assimilated, and which are not decomposed and changed into an insoluble substance; those that are not destroyed by respiration or other chemical actions in the body; those that do not act in a manner too astringent; and finally, those that are not so volatile as to pass by the pores of the skin, or by the lungs; all these substances can pass into the urine. M. Wohler thinks, with Prevost and Dumas, that the constituent parts of urine are formed in the blood, and that they are simply evacuated, not formed by the kidneys.

Therapeutical Conclusions.

The power of the vegetable alkalis to pass into alkaline carbonates, and as such to pass also into the urine, make them useful in the treatment of the pathological formation of uric acid. They have an advantage over the alkaline carbonates directly employed, in not being hurtful to the digestive organs; in being more agreeable to take, and susceptible of being varied. The uric acid is besides soluble in the alkaline carbonates, as Wetzler has proved.

The fruits which contain a vegetable alkali, such as cherries, strawberries, &c. will answer perhaps more usefully. It is said that Linnæus cured himself of the gout by a diet of strawberries. Professor Chelius has lately made some very satisfactory experiments since this essay was written.

Notwithstanding this, it is evident that we cannot hold out much hope that an uric acid calculus, completely formed, can be dissolved, because supposing the dissolution to have been effected, the phosphorous earthy salts would be precipitated by the continued alkalescence of the urine, which instead of a calculus of uric acid, would produce a calculus of an earthy phosphate, which would certainly be no great advantage.

Mayer *on the Ligature of the Carotids* *.—Dr. Mayer, of Bonn, in a Dissertation, read before the Academy there, entitled a Dissertation on the Regeneration of Arteries, has introduced some observations on the effect of the ligature of both carotids in various animals. He first takes notice of the opinions of Aristotle, Galen, Erasistratus, and others, with regard to the somnolency that arises from applying a ligature on the carotids; relates the experiments made on animals, by Bichat, Sir A. Cooper, and others; and notices the different operations where this artery has been taken up for aneurism; we will not detail these particulars here, as they are well known to all our readers.

It is now many years, says Dr. Mayer, since I tried this experiment on different animals. In dogs it was performed, at least, in the greater number of cases, without any very serious injury; although it should be observed that now and then very bad consequences arose.

In many of these animals after the ligature of the carotids had been tied, the respiration became increased, and the pulse more frequent, and vomiting took place; the eyes put on a sub-inflammatory appearance, the animal lay down and slept. In the goat, after tying the carotids, somnolency also came on. The pulse became frequent; the respiration increased, the eyes languid, with contraction of the pupils. In the horse the most serious consequences arose after the carotids had been tied. The eyelids were closed, the eyes fixed, and the animal became stupid, as if struck to the gound by a thunderbolt *(quasi Jovis ictu perterritus humi procumbit.)* This was followed by flying about, by convulsions, and he appeared tormented by severe pains within the head. Madness, with tetanus and opisthotonos, came on, and the animal died in about three hours after the operation.

This experiment was tried very often on rabbits, and was always more or less followed by similar phenomena. The following are the effects that were more commonly observed from tying the carotids in rabbits: well marked trismus,

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* Disquisitio de Arteriarum Regeneratione Aut. A.F.I. Car. Mayer, Bonn, 1823.

change of the nervous phenomena of the one side; for instance, the left eye would become immoveable and insensible, and even suppurated, whilst the right eye retained its mobility and sensibility. The right ear would be excitable by irritants and stimulants, while the left remained insensible. The respiration became weakened, pulse more frequent; diminution of heat, and death on the sixth day. This difference of results, observable, not only in different kinds of animals, but in animals of the same species, appears to this writer to depend on the relative size of the different arteries supplying the brain; in particular the carotid and vertebral. Dr. Mayer thinks this opinion, or rather suspicion, confirmed by the history of the operation performed by Sir A. Cooper, in the year 1805. In this case, eight days after the ligature had been applied on the right carotid, there supervened paralysis of the left side, with slight pain in the teeth, which latter symptom Dr. Mayer supposes to have been allied to trismus.

Bostock *on the Saliva during the action of Mercury* *.—After a detail of his experiments, in which no trace of mercury was detected in the saliva, during ptyalism, Dr. Bostock remarks :—

" The conclusions which we may draw from the above experiments on the nature of the saliva discharged while the system is affected by the action of mercury, are sufficiently remarkable to arrest our attention. We learn from them, in the first place, that no portion of the mercury is actually present in the fluid, from which it follows that the effect of this medicine, although so remarkably manifested upon the salivary glands, must be produced through the medium of the system generally, and hence we may presume that all the organs destined for the secretion of mucus will undergo the same change. This change would appear to consist essentially in the conversion of the animal matter, from the state of a mucus to that of a serous, or rather of an albuminous fluid.

" Now, although we are not sufficiently acquainted with the theory of secretion to know what are the minute operations which enable the capillary vessels connected with the glands to produce their appropriate fluids, yet we may form some idea of the relation which they bear to each other, as far, at least, as regards the greater or less complexity of the process. All those fluids, for example, which proceed from what are termed serous membranes, appear to differ from the serum of the blood solely in the proportion of albumen which they contain, and we may therefore conceive that they are generated by a process resembling transudation ; and that this is, in a great measure, of a mechanical nature. In the secretions, however, which are discharged from the mucous surfaces, we find a change effected which is of a

* Medico Chirurg. Trans.

chemical nature, where a new substance is generated which did not previously exist in the blood. In what way the vital functions act, so as to convert albumen into the mucilaginous matter which forms the basis of saliva is, at present, beyond our power to ascertain; but whatever it be, we find that in the case before us, the operation of mercury upon these parts is to counteract the ordinary secreting process, and to reduce the action of the glands to that of mere transudation."

M. Velpeau *on the Teeth, Hair, and Fat, which are sometimes met with in Ovaria.*

"M. Velpeau, in his Memoir, read to the Philomathic Society, on the 9th of April, brings forward some new facts, discusses those which have been long since known, and proposes a new explanation of certain others to be found among them.

"The first of these cases, observed in 1823 at Paris, was of a female, who died at the Hospital St. Louis. M. Velpeau found, 1st, The uterus more bulky than in the natural state; 2d, The ligament large, the Fallopian tube and the ovarium of the right side in a sound state; 3d, A tumour as large as the head of a male adult, and situated on the left superior angle of the womb. This tumour, which appeared to him to be the ovarium, was formed by a cyst, the parietes of which amounted in several places to at least a line in thickness, and it contained several pounds of a yellowish fat, appearing, as it were, coagulated. A great quantity of hair existed in this fat, amounting to three inches in length; also an organized body, completely separated from the fat by cellular strings, some of which were attached to the sac. In this substance was detected bone, portions of flesh, and skin covered with hair, similar to that which was detached. The principal bone appeared to form a part of the great ala of the sphenoid bone, also of the palatine bone, and of the zygomatic process of the temporal bone. The skin, intimately united to the soft parietes which separated it from the bone, and in which muscular fibres certainly existed, was pierced by a great number of pores, in which hairs were implanted.

"The second case reported by M. Velpeau, had a great resemblance to the former one; it was of a female, seventy years of age, who had died in the Hospital of Tours, in a state of mental imbecility and of hydrothorax—the sequel of several chronic pleurisies. In the abdomen was found a tumour of the thickness of the head of a fœtus which had come to its full time, being enveloped by the peritoneum. This we must regard as the right ovary enormously developed. This tumour, formed by a very thick fibrous pouch, contained, 1st, several pounds of a sort of fat, which might be compared to that of melted goose grease; 2d, a considerable mass (as if stuffed with hair) of a reddish-white colour, and of the size of a large nut, enclosing a part of the maxillary bone, with an incisive tooth exactly like that of an adult, the gummy and labial portions corresponding to it; and, lastly, hair from three to five inches in length, implanted in the skin of the portion of a lip.

"The third observation of M. Velpeau was made upon the dead

body of a female, in the dissecting rooms of the Ecole de Medecine. The uterus was a little more developed than usual, and of a softer texture. The round ligaments and the Fallopian tubes were so interlaced, that it was difficult to determine to what side they belonged. Two tumours were found attached to the angles of the matrix, by tendons like the ligaments of the ovarium. The one contained within a cyst, the interior parietes of which shewed the follicles from which hair was developed, a certain quantity of white soft granula fat mixed with hair of a chesnut colour: besides, quite at the bottom, the three first molar teeth of a side of the jaw in a natural position perfectly developed even to the corona, but only adhering to the sides of the sac by very inconsiderable fibro-osseous flakes. The other tumour, less in size, merely inclosed a shapeless mass, having an osseous appearance, in which no very distinct part could be recognized.

"The fourth and last observation chiefly dwells upon a fact discovered by M. Velpeau himself, on the body of a woman whose organs of generation were explained by him. One of the ovaria, scarcely larger than the other, which was healthy, appeared to him transformed, as it were, into a small sac containing grey hair, for the most part in a free state, and reunited in a small clew, whilst the others were adherent to the exterior of the sac.

"In dissecting this specimen under the inspection of the commissaries (Messrs. Blainville and Serres) named by the society, M. Velpeau has ascertained, that this tumour, which shewed at its base a small cartilage of the form of an officer's gorget, was so perfectly distinct from the entire ovary, from which it was separated by the membrane proper to it, that it was really developed in the extremity of its ligament. He has equally ascertained that, in the second observation, the largest of the tumours was by no means in the ovary, which existed, although flattened and reduced, below it.

"Among the different explanations which have been given of this fact, the principal ones are three in number, viz. that of the nisus formativus of Blumenbach, according to which these bodies would produce themselves spontaneonsly by a plastic force:—that of Coley, that these bodies are the result of an incomplete fecundation; and that of Haller, that they are the remains of a natural fœtus, originally of regular conformation. M. Velpeau inclines towards the latter opinion, against M. Meckel's view of the case, which he refutes; but, as it did not still appear to him susceptible of application to all the facts collected, which he divides into three classes, M. Velpeau, resting upon such general considerations as an evident relation to the structure of the skin, and of its accessory parts, proposes to admit, for the explanation of those of the third, where the ovary contains merely fat, hair, or teeth, or any one of these three substances, that these bodies have been actually produced by the parietes of the cavity in which they have been found. Thus he places them in the same predicament as those where analogous substances have been found upon the tongue, in the gullet, the intestines, the gall-ducts, the bladder, &c.

"M. Blainville, however, in his report upon this Memoir of M. Velpeau, has made the observation, that these three kinds of bodies were evidently products of the cutaneous envelope, and not of organs. Nor has he thought himself justified in adopting what approaches sufficiently to the support of this new theory, because he could not possibly admit, that, either within the ovary or its ligament (for he supposed, what is very probable, that these bodies are never in the ovary itself,) we can trace any prolongation of the cutaneous envelope.

"We must, at first, carefully distinguish those cases wherein it is a question if substances like those adduced by M. Velpeau are found in individuals of the male sex at every age, or of the female sex, evidently too young for us to suppose, even for an instant, that there could be a probability of fecundation.

"In all other cases, that is to say, in individuals of the female sex, at an age which can admit of fecundation, we must establish a division, according as the bodies before mentioned may have been found; 1st. In the peritoneal cavity, that is to say, in a cyst adhering to the ovary, to its ligaments, or to the peritoneum itself; 2d. In a cavity having a direct communication with the exterior envelope, that is to say, in the Fallopian tube, the uterus, or in the intestinal canal; 3d. and, lastly, In the tissue of the parts themselves.

"In short, the explanation would be necessarily different.

"The facts of the first division cannot be explained by a *gemination.*

"Those of the second would not be so, but by admitting an extra uterine impregnation, mediate or immediate, of a complete or incomplete fœtus.

"The explanation of the facts of the third case would still be entitled to a place after the same manner, without having recourse to the reasoning of M. Velpeau, but it would be necessary to do it effectually, if the bodies produced were actually in the intestinal canal.

Lastly, if the existence of hair in the tissue of parts had been well proved, without any anomalous disposition of the surrounding integuments having been remarked, there would exist a necessity for recurring to the *nisus formativus* of Blumenbach.

PATHOLOGY.

Laennec's *New Edition.*—The most important addition we have to record in this department, is the publication of the second and long expected edition of Laennec's work; an acquisition which, valuable as it is, gives but trivial compensation for the irreparable loss which the science has sustained in the person of its gifted author. In the prime of intellectual vigour, in the zenith of his well-earned fame, he has fallen a victim to the incessant ardour and

activity, with which he pursued to the last his favourite studies. This edition, the last fruit of his unwearied labours, has been so completely altered, both in respect of arrangement and matter, as to demand from us an extended analysis. This we shall endeavour to undertake in our next Number, and we shall avail ourselves of the opportunity to present to our readers, some biographical account of Laennec; also of his genius and character as a pathologist, and the past and probable influence of his discoveries on the progress of medical science.

It may be proper here to take notice of an alteration in the construction of the stethoscope, which had been adopted by M. Laennec for some time previous to his decease; and which constitutes one of the few real improvements that have been made on its original form. It consists simply in adopting a flat circular rim or margin to that end of the cylinder which is applied to the ear. This ear-piece may be shaped out of hard wood, or, what is better, of horn, and is made to fit tightly around the extremity of the instrument; it projects about half an inch, and the surface which is applied to the ear is slightly hollowed out. Its advantages consist first, in affording a steady support for the instrument when resting against the ear; and it not only thus obviates the motions of the cylinder, which are apt to confuse the hearing, but by including the ear in its concavity, it excludes external sounds, consequently those which pass along the tube are rendered more audible and distinct.

On Rupture of the Heart; by G. M. Zecchinelli, *(Nuovi Saggi della Cesareo-regia Accademia di Scienze, &c. di Padova.* Vol. 2. 1825.)

The object of this Memoir is to prove, (contrary to the opinion of Testa, author of an excellent Italian work on the diseases of the heart,) that ulceration is not a necessary precursor of the rupture of any of the cavities of the heart. For this purpose the author quotes several illustrative cases, a few of which we present. In one observation, made by Dr. Olmi, of Florence, a man died suddenly during the fourth attack of a most acute pain felt along the sternum. On examination, a fissure was found in the posterior part of the left ventricle, near the septum medium, without any signs of inflammation or suppuration, but merely laceration of the fibres. Pohl relates a case in which a man, aged forty-five, soon after having suffered colicky pains, fell down and died. The right ventricle was burst about midway between its apex and the auricle, presenting a fissure as long as a finger, and much wider inter-

nally than externally; the substance of the heart was soft, especially in the vicinity of the rupture, but without any appearance of inflammation or ulceration.

Another instance is furnished by Zannini, in his notes to Baillie's Morbid Anatomy; in it there was an opening as wide as four fingers not formed by laceration of the fleshy fibres, but merely by their separation and detachment from each other. The rupture commenced about the angle formed between the posterior side of the left ventricle and the septum, running in an oblique and tortuous manner through its substance, and terminating on the posterior surface of the heart a little below the right auricle. The left ventricle presented also two or three other lacerations, with this singularity however, that commencing externally, they affected only its fleshy fibres without penetrating its cavity.

From these and some other cases of the same kind, Dr. Zecchinelli concludes; 1st, that ruptures of the heart occur more frequently in the left ventricle which is strongest, than in the right which is weaker, or even in the auricles; 2d, that a much greater number of such cases happen in men than in women; 3d, that the rupture takes place in the act of contraction and not of dilatation; 4th, that ruptures may occur at the same time in both ventricles, or in several parts of either of them; 5th, that they may take place in the strongest points rather than in those which are weakened and diseased; and near the latter, though not in them; 6th, that the rupture is sometimes found more ample internally than externally, a probable indication of having commenced in the former situation; 7th, that sometimes there is an appearance of simple laceration, as though of a piece of linen. The clearest proofs of the two first propositions are found in the works of Morgagni, Baillie, and the histories of all the cases known. Of the fourth we have examples in the case quoted from Zannini; the hypochondriac mentioned by Morgagni, in whom the left ventricle was found ruptured in three places; and in the case of the Countess de Chabannes, related by Portal, in whom, after an excess of anger, the heart was found burst in three points of the left ventricle, and one of the right. The four last propositions are drawn from the various cases adduced by the author, and the third, *i. e.* that rupture of the heart takes place during its contraction, from the consideration that such a state is most capable of favouring that violent reaction to which the rupture owes its origin. In this view Zecchinelli, following Portal, compares the rupture of the heart with that of voluntary muscles during convulsive action, or of the uterus, when any obstacle resists its expulsive efforts.

But even in those cases in which the forcible and impetuous action of the heart is not followed by its rupture, death may take place from other causes, viz. the heart either remains full, globular and motionless, as already described by Lancisi; or blood transudes through its texture so as to fill the pericardium, but without rupture. The author quotes two cases of this kind, one by Vater (Ephem. Nat. Cur.), and the other by Thomson (Med. Obs. and Inquir.). In the latter, the pericardium of a man, aged forty-two, who died after a long illness, was found to contain three pints of fluid blood with many grumous clots. In the instance taken from Vater, a Danish soldier, who had enjoyed good health, perished whilst gratifying his desires in the arms of his mistress, being attacked with horrible agitation and cries. No other morbid appearance was found than the state of the pericardium filled with blood, without any evident rupture of any of the cavities of the heart; whence Vater concluded that the blood had been poured out by the orifices of the coronary vessels. Of the three kinds of death which may arise from the impetuous action of the heart, when opposed by insurmountable obstacles, viz. it remaining full, round, and motionless; or bursting in some of its points; or lastly, exuding blood. Dr. Zecchinelli thinks that the first is the most common; the second less so, and still less so the third, which has been but rarely observed, and sometimes not credited, but ascribed to the undetected rupture of some vessel.—(*Morgagni, Epist.* xxvi. 12.)

Dr. Macmichael's *Cases of Diseased Heart* *.

1. *Case in which Tubercles were found in the Pericardium and Cavities of the Heart, as well as in the Lungs.*—J. Burrows, aged thirty-five; admitted April 4th, died June 2d, 1826. This man, during life, laboured under symptoms indicative of disease on the right side of the heart. He was originally admitted into the hospital for colica pictonum; and, upon the subsidence of this affection, the following symptoms claimed the attention of his physician:—

"The upper half of the body became œdematous; the countenance was livid, and occasionally of a purple colour; the breathing was unnatural, and at times even difficult; the pulse did not deviate much from health. There was considerable anxiety depicted in the countenance; that peculiar expression so characteristic of disease of the heart, or large vessels connected with it. In short, there was evidently an obstruction offered to the free transmission of the venous blood on the right side of the heart, causing an accumulation in that part, and turgescence in the large venous trunks. The serous infiltration into the

* Medical and Physical Journal, for August, 1826.

cellular membrane, producing œdema of the upper part of the body, appeared to be the effect of this obstruction to the venous circulation.

" He continued in this state for several weeks. The little sleep he had was disturbed ; medicines appeared to have but little effect, even as palliatives ; the symptoms became more severe ; the lividness of the surface, and the œdema increased ; and he at length sunk, exhausted and worn out by the long continuance of his disease.

" The preceding brief sketch will serve to connect the symptoms with the morbid appearances.

" *Dissection.—Thorax :* The lungs were completely disorganised ; the parenchymatous structure was thickly studded with white tubercles, in different stages of development. Here and there this process appeared to be so far advanced as to have removed the tubercles themselves ; the cysts which they had occupied now containing pus of a scrofulous character, and forming abscesses of different dimensions. Other parts of the lungs were found to contain a ligamentous structure, which was cut through with some difficulty. So numerous were these different morbid changes throughout the substance of the lungs, so dense was their structure, and so universally adherent were they to the surrounding parts, as to cause great difficulty in removing them from the chest.

" The pericardium contained tubercles, apparently of the same structure ; these were situated around the base of the heart. At the angle formed by the reflexion of the pericardium over the surface of the heart, they were covered by the delicate serous membrane. On opening the heart and large vessels, this morbid growth was found to encroach even upon their cavities. A large tubercle, situated at the union of the two cavæ, and others surrounding the inferior cava, just after its passage through the diaphragm, had so straightened these vessels, that it was with difficulty that the little finger could be made to pass the obstruction. A similar morbid growth was observed in the right auricle, forming a considerable projection ; this occupied the septum auriculorum, and thus implicated also the left auricle.

" *Remarks.*—This dissection satisfactorily accounts for the symptoms of venous congestion on the right side of the heart ; and it is not at all improbable that death was caused by the long-continued circulation of imperfectly arterialized blood ; indeed it is only astonishing how life could have been so long supported with such a diseased state of lungs. It is worthy of remark, that this patient never had cough, expectoration, or any other symptom of phthisis.

" Although Boerhaave is supposed to have described tubercles of the serous membranes, and Bichât, with De Haen and others have given more accurate descriptions of this disease, still (with the exception of the latter author,) Dr. Baillie appears first to have noticed tubercles of the pericardium. He states that they are of very rare occurrence, and that he has only met with one instance of their formation in that membrane. Dr. Baron, in his work on Tubercles of the Serous Membranes, has not treated of this disease in the pericardium.

"The above case was first supposed to be an example of the disease described by Dr. Baillie; but on making a more accurate examination, it evidently appeared to be merely a propagation of the tubercles from the lungs; for it was singular that not one of these formations was in an insulated state, but they were found to be invariably connected with tubercles arising from the lungs. Some of them appeared to be the bronchial lymphatic glands in a diseased state. There was no inflammation of the heart or pericardium. Proofs, however, of the independence of tubercles of inflammation for their production, have now ceased to be necessary. If a doubt on this subject does still remain, we have here an instance of these formations in the heart itself, still without any symptoms of inflammation during life, or marks of the existence of such a state exhibited after death.

"2.—*Case of Enlargement of the Heart, (the presence of which was not manifested by the symptoms) and of Acute Hepatitis.*

"April 7th, 1826.—James Fisher, aged thirty-six, was admitted, on the 5th, with slight rheumatic symptoms: indeed, so slight were they as to lead to some doubt of the necessity of his becoming an *in patient*. The bowels were opened, and some camphor mixture, with colchicum, given every six hours. Next day, his rheumatism was better, but some yellowness of the skin was observed. The tongue was clean, and the pulse natural. During the night of the 6th, the apothecary was suddenly called to him; he found him complaining of pain at the scrobiculus cordis and right hypochondriac region, which was increased on pressure; his breathing was oppressed. These symptoms continued to increase, and within four hours had acquired great intensity. The pain was very severe, and much aggravated by pressure; the respiration was difficult, with pain behind the right scapula; in short, the patient evidently laboured under an attack of acute hepatitis. Twenty-four ounces of blood were taken from the arm, from which he experienced great relief, and soon after fell asleep. The blood drawn was cupped, and its surface covered with a buffy coat of a yellow colour.

"About ten o'clock this morning, he died suddenly, having been seen about a quarter of an hour before, at which time he appeared to be much better, and expressed himself to that effect.

"*Dissection.*—The skin of the whole body was of a deep yellow colour. *Abdomen:* The liver was much enlarged, and of a purple colour. On making a cut into its substance, it exhibited a granulated and firm texture, arising from interstitial deposition. The vessels appeared to be gorged with blood; the peritoneal covering was perfectly natural. The viscus had evidently been some time diseased, but appeared to have recently taken on general inflammatory action.

"*Thorax:* The heart was of unusual size, and weighed two and a half pounds: a great increase, when it is remembered that the human heart, in a state of health, weighs only a few ounces *. The coronary arte-

* Lieutaud has described a heart which weighed five pounds.

ries were thicker in their coats than natural, but there were no traces of ossification. The enlargement of the heart in this case presented some peculiarities. The right auricle and ventricle were much dilated, and the communication between these two cavities had suffered with the general enlargement so much, that the valves, in consequence, must have been incapable of duly performing their office. The walls of this ventricle were softened; the muscular parietes were pale and degenerated; in short, the right auricle and ventricle were as one large and flabby pouch, stuffed with a dark coagulum, and their structure corresponded to the softening of the heart described by Portal. The left cavities presented a striking contrast with the above description. The muscular walls of the left ventricle were thicker and more vascular than natural, forming hypertrophy of the left ventricle; the aortic valves were slightly diseased; but any mechanical obstruction which could have been offered by them was too trifling, and altogether inadequate to the production of this morbidly increased growth of the ventricle.

"The lungs were found to be universally adherent to the pleura lining the ribs, and had suffered from a considerable effusion of serum into their substance.

"*Remark.*—It is remarkable that such extensive disease of the heart should have existed without the occurrence of any symptoms during life indicating its presence. This circumstance countenances the opinion of the late Mr. Burns, who states that symptoms of diseased heart seldom occur, unless inflammation supervenes, or the enlargement be of an active character."

Dr. Young's *Case of Disease of the Heart**.

"*Case in which numerous small Cysts, some of which contained pus, and portions of Lymph, were found in the Ventricles of the Heart.*—July, 1826.—Ann Goodall, aged twenty; has been subject for ten years to occasional palpitation of the heart and sensation of choaking in the throat, with pain in the left side of the thorax, extending to the back and left shoulder, and accompanied with vomiting. The attack commenced with sense of obstruction at the scrobiculus cordis, rising to the left shoulder, and descending the arm to the veins and little finger of the left hand. At first, these paroxysms occurred very rarely; once only in several months, and did not continue more than an hour or two at each time. Within the last two years, they have become much more frequent. In the intervals, she reports that she was perfectly free from ailment.

"Since Christmas last, these attacks have increased in frequency and violence, and she has suffered four weeks, with only one intermission, from the present attack. *Pulse above two hundred,* occasionally too rapid to be counted; with throbbing of the carotid arteries communicated to the veins, through which the rapidity of the circulation is remarkably visible. The catamenia have not appeared for the last seven

* Medic. and Phys. Journal for September.

months. She sleeps only on the right side, and with her head raised. Burning heat is felt over the left side of the chest, with a sensation of great anxiety at the præcordia. Skin cool; no thirst; tongue clean; bowels costive; sleeps ill.

"It is worthy of remark, that during one interval of twenty-four hours, which took place while she was in the hospital, the pulse was ninety, and the symptoms greatly abated. With this exception, however, the symptoms continued to increase in violence until a few days before her death, when she became insensible, with occasional screaming and convulsions, particularly of the muscles of the upper extremities.

The lower extremities became œdematous, and gangrene began to appear on the feet; and she died, August 9th.

"*Dissection.*—The feet and legs were in a state of mortification, with large vesications on the surface, and œdema of the whole subcutaneous texture of both limbs, as high as the pelvis.

"The lungs were more solid than usual, and contained a large quantity of watery fluid.

"The heart was rather large, and fatter than is generally the case at so early an age. On opening the right ventricle, a quantity of solid substance was perceived, the nature of which it was at first difficult to discover, as it had some of the appearance of coagulated blood; but it was evident that a part of it only was the result of coagulation after death, and the remainder looked more like the contents of an aneurismal sac. On more accurate examination, however, it was found to consist principally of effused lymph, in masses of various shapes and sizes, and in different stages of formation; the colour being for the most part of a brownish yellow, but in some parts darker, as if mixed with blood. Many portions were loose and detached, but others adherent to the texture of the heart. Some formed distinct globular cysts, varying from the size of a pea to that of a small walnut; one cyst of the latter size being situated at the bottom of the ventricle. When these were cut open, the inner surface was reticulated, (in the same manner as may often be perceived in abscesses in the liver;) and some of them contained a few drops of pus, while others were entirely empty. The greater part of the lymph, however, was in the solid masses, easily torn or broken by pressure. The lymph was most abundant at the lower insertions of the fleshy columns of the tricuspid valve, but extended also into every hollow and sinus formed by the reticulated texture of the sides of the ventricles, in the lower half of its cavity, so as to make it doubtful, on first cutting the substance of the heart, whether the lymph and pus were situated in the cavity of the ventricle, or whether they were in small cells in the muscular texture. But the lymph could every where be raised, so as to show the smooth surface formed by the serous lining of the heart, except in one or two places, where it was doubtful whether there was not a slight abrasion of the membrane; though it seemed, on the whole, more probable that this appearance arose from a firmer adhesion of the lymph, with which a portion of the membrane had been also raised by the handle of the knife.

" In the left ventricle, an exactly similar effusion of lymph was discovered, but in a smaller quantity.

" On making a longitudinal section of one of the pillars of the mitral valve, no distinct muscular appearance could be found, but a yellow substance was seen, in which fibres were only partially evident, between which substance and the serous membrane of the heart a small quantity of blood had recently been effused. In the upper part of the left ventricle, near its junction with the auricle, a considerable portion of the muscle was also partially disorganized, but in a smaller degree; the yellow substance being here in granules, mixed with the fibres, and with spots of effused blood; and a branch of the coronary artery could here be seen nearly obliterated by coagulation of the blood within it. A few smaller portions, of a similar appearance, were also seen in other parts of this as well as of the right ventricle.

" The brain was natural in appearance, except in the upper part of the left corpus striatum, which was softened and of a yellow colour, to about half its depth; and the circulation in the internal carotid artery of the same side must have been completely obstructed by a firmly adherent coagulum, which was found within it at the side of the sella turcica. The dura mater was much more opake than usual."

Dr. Hewet *on Follicular Ulceration of the Mucous Membrane of the Intestines in Idiopathic Fever* *.

That small circumscribed ulcers are frequently formed in the mucus membrane of the intestines, particularly the ilenm, during the course of idiopathic fever, without any symptom of local inflammation, is a fact which must be familiar to every practitioner who has been in the habit of inspecting the internal surface of the intestines in such cases; and it is only from an habitual neglect of this part of *post mortem* examinations, that their frequency (we believe they will be found to a greater or less extent in nine cases out of ten,) has not been more generally appreciated. The share which these ulcers may exercise in ducing the symptoms, and the regard to which they are entitled in regulating the treatment of fever, form questions totally different from that of their frequency, and questions of much difficulty. Our design in here introducing this interesting subject, is not to discuss these points, but simply to record the pathological conclusions, which Dr. Hewet has drawn from the history and dissection of ten such cases, which occurred at St. George's Hospital. Whilst we can bear testimony to the accuracy of his descriptions, we think several of his deductions premature, if not positively erroneous, but our limits do not admit of specific criticism, and we therefore leave the reader to form his own judgment.

" My first object, in detailing the above cases has been to exhibit

* Med. and Phys, Journal.

the origin and progress of the disorganizing process, by which follicular ulceration is effected in the mucous membrane of the intestines, during the course of idiopathic fever.

"A reference to the above post-mortem examinations will show that the disease seems at first to be limited to the mucous follicles, affecting both the glandulæ aggregatæ and solitariæ, more especially the former, where distributed over the ileo-cœcal portion of the intestines;—that their orifices may be seen plugged up with a dark and morbidly inspissated secretion;—that this secretion continuing, and being pent up within the follicle, in consequence of the obstruction of its orifice, tumefaction of the gland necessarily ensues, as in the sebaceous follicles in acne punctata; that these mucous glands may be seen in various stages of enlargement,—at first only slightly elevating the mucous membrane, and, by their protrusion of it, presenting an uneven granulated surface, like that of dried seal-skin;—that, in most instances the incipient tumefaction of the follicles, and in many instances their ulceration, takes place without any increased vascularity of the neighbouring surface;—that the disorganizing process, by affecting many of the contiguous mucous glands, forms ulcers of the size of a sixpence or a shilling, or even larger in some instances, without any increased vascularity, but more generally with slight redness and considerable thickening of the mucous membrane immediately surrounding the margin of the ulcer;—that the margins of the ulcer frequently appear, at least in the early stages, puckered, jagged, or fringed;—that the base of such ulcers often exhibits a rough irregular surface, with little projecting masses of enlarged and sloughing follicles, or presents a sloughy ash-coloured appearance, resembling that of chancre, or displays a dirty-yellow hue, from the bilious-coloured feculent matter adhering to it;—that the ulceration seems to commence sometimes at the apex of the tumefied gland, sometimes in the membrane protruded, and thus forced into ulceration by it;—that the work of disorganization seems to be effected partly by the ulcerative, partly by the sloughing process;—that each individual follicle gradually sloughs off, in proportion as its neighbouring membrane is eroded by ulceration;—that this erosion extends gradually downwards, from the mucous to the muscular and peritoneal coats, sometimes, though rarely, perforating the latter, and then rapidly exciting extensive peritonitis, by the escape of foreign matter into the cavity of the abdomen;—that this perforation of the peritoneal coat is sometimes prevented, by the effusion of lymph from its surface, external to the ulcer, causing agglutination of it to some of the neighbouring convolutions of the intestines, or to the omentum;—that the mesenteric glands, communicating with such ulcers, are generally found increased in size and vascularity; and sometimes, when cut into, resembling, in colour and consistence, the pulp of a Morella cherry, or even that of a red cherry.

"The symptoms, too, attending the recovery of some of the cases, hereafter to be described, seem to warrant the belief that such ulcers had existed, but had subsequently healed.

"An additional, and I think conclusive, proof of the curability of

intestinal ulcers, (already asserted, and very ably maintained by Dr. P. Latham,) was afforded to me by the appearances discovered in the intestines of a sailor, George Gratlin,) who, about fourteen months previously to his death, had experienced, while serving off the coast of Africa, a severe attack of dysentery. From this he slowly recovered sufficiently to return to his duty, though subject ever afterwards to occasional irregularities of the bowels, and to an obscure sense of pain when forcible pressure was applied to the abdomen. He died December 22d, 1825, in St. George's Hospital, while under my treatment for a disease quite unconnected with his former dysenteric attack, and about fourteen months subsequently to it.

Upon examination of the intestines, the mucous membrane, from two or three inches above the ileo-cœcal valve along the whole course of the colon and rectum, appeared spangled with circular or irregularly-oval scars of former ulcers. Some of them, in which the process of reparation had not yet been completed, exhibited the following appearances:—Along the base and margin of these healing ulcers, there was distinctly visible a thin film of yellowish-white coagulable lymph, which seemed to be gradually proceeding to fill up the ulcerated cavity. In many instances it had not yet reached the level of the adjoining surface; in others, it had: in the latter the regeneration of the surface seemed complete, the lymph having become so intimately blended with the neighbouring membrane as to be scarcely distinguishable, except by the glistening and spangled appearance above mentioned. In the former the process of reparation seemed to be gradually advancing; in these, the neighbouring edge of the mucous membrane (which had probably been previously thickened and fringed,) appeared to be gradually subsiding, contracting and bevelling itself down so as to favour the progress of the cicatrization. Where the breach of surface had been completely repaired, there was no increased vascularity; and only a very faint appearance of it in the ulcers undergoing the healing process; the degree of redness seeming to vary according to the exigencies of each individual ulcer, being more or less in proportion as more or less lymph was required for the filling-up of the ulcer, and gradually becoming evanescent, as the continuity of the surface was re-established.

"The healing of these ulcers appeared to me to be effected, not, as in external ulcers, by any visible growth of granulations, but by a process analogous to that which is displayed in the reparation of ulcers of the cornea by the deposition of lymph.

"In the healing of follicular ulcers, (though, to the eye of the observer, there may be an apparent regeneration of the mucous membrane, completely obliterating the former breach of surface,) still, though the continuity of the membrane is re-established, yet the parts so healed over must remain permanently unprovided with mucous follicles; for, previously to the commencement of the healing part of the process, it seems to be essentially necessary that the ulcerating follicles should have sloughed off.

"This restorative power, too, seems to be limited merely to the re-establishment of the continuity of the exhalant surface, and does not extend to the regeneration either of the follicles, as just stated, or of any the smallest portion of the valvulæ conniventes, which may have been eroded. I have had opportunities of distinctly tracing such ulcers, which have apparently been undergoing the healing process, merely by the contraction of their margins and the effusion of lymph, without any attempt at the reproduction of the eroded part of the valvula connivens.

"In most of the cases of follicular ulcers of the intestines in idiopathic fever, the seat of the ulcers will be indicated upon opening the cavity of the abdomen, by some deviation from the natural transparency of the peritoneum, either by small opaque patches of silvery whiteness, or by apparently attenuated spots, occurring in discoloured portions of the intestines. In one case, (vide Elizabeth Lawson,) the peritoneum retained its natural transparency so perfectly as to allow me to distinguish most accurately the seat and extent of the different follicular ulcers, before the cavity of the intestines was opened. But it not unfrequently happens that there are no peculiar appearances of the peritoneum, to indicate the existence of these follicular ulcers; and hence they have frequently been overlooked.

"To those who have not the opportunity of testing the accuracy of these statements, by frequent inspection of the intestines in fatal cases of idiopathic fever, and still are desirous of becoming acquainted with the manner and progress of the follicular ulceration above described, it may perhaps be satisfactory to learn that, frequently after death, produced by phthisis tubercularis, attended with colliquative diarrhœa, a similar, though slower, process of disorganization may be detected, first attacking the mucous glands, more particularly those of the ileum; and then eroding the muscular, and sometimes, though very rarely, even the peritoneal coat.

"That a greater resistance is made by the peritoneal than by the other coats, to the progress of this ulcerative action, is rendered evident in fatal cases of phthisis tubercularis, attended with follicular ulcerations of the intestines; for the ulcers are often numerous, and may be seen in various stages of their progress,—many of them penetrating through the mucous and muscular coats, so as to expose the interior of the peritoneal coat, for the extent sometimes of an inch in diameter, without, however, perforating it.

"Besides this mode of follicular ulceration, there are two other morbid appearances, which I have occasionally detected in the mucous membrane of the intestines of those who have died with protracted fever, at a period when abdominal derangement had entirely subsided, or was not remarked as a prominent feature of the disease.

'One of these morbid appearances may be described as consisting of light buff-coloured patches of various forms and sizes, without elevated borders, but with a well-defined outline, marked by the sudden difference of colour between them and the adjoining surface. The

enclosed area is traversed by numerous thin seams, or septa, forming by their interlacement minute cellules, the base of which appears to be either the denuded peritoneum, or a thin nearly-transparent film of lymph deposited upon that membrane. The delineation by words of such alterations of structure must always be imperfect, but perhaps the imagination of the reader may be enabled to picture to itself the appearance meant to be described, if it be stated that it may be not inaptly compared to the texture of the wing of a dragon-fly, or the skeleton of a decayed leaf.

"The other morbid appearance above alluded to, so nearly resembles the one just described, that the only mark of difference consists in the slight elevation of the borders and septa by the deposition of lymph; consequently the coats of the intestine at these spots, instead of being, as in the former case, attenuated, are slightly thickened; and the seat of the altered structure may be recognized, before the cavity of the intestine is opened, by the silvery opacity of the peritoneum, which, however, while passing over it, exhibits no irregularity, whether of puckering inwards or projection outwards, but retains its uniformly level and smooth surface.

"These two appearances seem to me to display the progressive stages of the healing process, after the separation of the follicles, to the ultimate regeneration of the membranous surface.

"In the progress towards follicular ulceration, though a cluster of these glands may have become simultaneously enlarged, and have thus, by their pressure upwards, caused erosion of their investing membrane, still the latter is not always wholly eroded, but only partially around each follicle, to the extent of allowing the separation of the follicle through the perforation, while the still surviving filaments of the membrane form the septa enclosing the cellules left after the escape of the follicles. It is from these septa, as well as from the base of each cellule, that lymph is effused, to repair the breach of surface. This deposition at first produces a slight elevation and opacity about the septa and margins of the ulcers, but it is gradually converted into the nature of the neighbouring membrane, assuming at the same time the same level and the same degree of transparency.

"Besides these follicular ulcerations, I have occasionally observed the ecchymosed spots and ulcers, so admirably described by Dr. P. Latham; and recently, since writing the above observation, I have read, in the Number of the Medico-Chirurgical Review of July, 1826, some extracts from a paper by Dr. Bretonneau, of Tours, entitled Dothinenteritis. I am very happy to add my evidence in favour of the general accuracy of his description of these alterations of structure, though I readily confess myself unable to depict, as he has attempted to do, the daily changes in the appearance of these follicular ulcers of the intestines, with a precision equalling that with which the daily progress of variolous pustules may be delineated.

"In conclusion, I beg to observe, that the above remarks are directed exclusively to the elucidation of the pathology of the follicular

ulceration of the mucus membrane of the intestines in idiopathic fever. In their origin and progress they are as different, as in their termination, from that superficial abrasion, which has gained the distinctive appellation of *abrasive ulceration* of the mucous membrane of the intestines.

"I suspect, however, that these follicular ulcerations in the intestines are of much more frequent occurrence than is generally imagined. During the sectio cadaveris of a young girl, who died at St. George's Hospital, in August, 1825, four or five days after a very extensive burn, I found numerous follicles, enlarged and protruding the mucous membrane, all along the course of the ilium and colon, some of them just passing into a state of ulceration at their most prominent part. These appearances not only remain still vividly impressed upon my recollection, but are recorded in my notes, written immediately after the dissection.

"At a future time an attempt will be made to ascertain the period of idiopathic fever, at which this follicular ulceration of the intestines usually appears; and a plan of treatment will be proposed, founded upon the above pathological views, and illustrated by the successful termination of cases, notwithstanding the occurrence of symptoms indicating, or supposed to indicate, the existence of these follicular ulcerations.

"At present, I would only beg permission to state, that these pathological views afford an additional and powerful argument for active and persevering purgation by effective doses of calomel, combined with any of the usual auxiliary purgatives, in the early stage of fever. Its power of preventing follicular ulceration, seems readily explicable on the following principles:—The preceding investigations appear to have established that the first step towards follicular ulceration is obstruction of the orifice of the gland by its own morbidly-inspissated secretion; the next step being distention, from the continuance and accumulation within it of this secretion, and subsequently ulceration. If, then, at this period effective purgatives be employed, they will clear out the obstructed orifices, and thus anticipate the distention and subsequent ulceration of the follicles."

Disease attributed to Ergot or Spurred Rye.

To the Editor of the Quarterly Journal.

Sir—The following extract from the New York Medical and Physical Journal*, inserted in your last Number, and in some of the other Medical Journals, appears to me to involve an error which has been passed over without notice. As that error (if such it prove to be) is one of a serious nature, I take the liberty of calling attention to the subject through the medium of your Journal.

"*Disease from Spurred Rye.*—Mr. Theodore F. King, house-

* Number 16.

surgeon of the New York Penitentiary, describes thirty-two cases of morbid affection from this cause, occurring in that prison, in the fall of last year. Small livid spots made their appearance on one or both of the lower extremities, generally about the foot, without any local pain or weakness, or any perceptible general indisposition.—After a few days, they would become more numerous, and extend up to the knee. Pain now occurred—in one case very severe; and, in some instances, the patient lost the use of his lower extremities. The pulse was feeble, and seldom exceeded 100 in a minute. The face had a peculiar livid appearance. No unusual heat of the skin occurred. The tongue was slightly coated and 'very flabby.' In several cases, there were considerable sores about the mouth, and, in two or three hæmorrhage from the gums; bowels generally regular; urine natural; death always preceded by 'severe colicky pains;' usual duration of the disease about four weeks. Ten cases proved fatal. No mention is made of uterine pains occurring among sixteen females.

"The only dissection made, exhibited the intestines studded with dark, livid spots, in the greatest abundance, upon the large intestines; and the stomach inflamed, with a discoloration upon the under and larger portion. The uterus was natural.

"Has any one ascertained whether our ergot be or be not a different species from that of Europe? We have here, among thirty-two patients, not a single case of gangrene recorded."

Before entering on the immediate object with which I have drawn your attention to this statement, I cannot help remarking in it a very material omission, which in some measure deprives me of the data necessary to come to a positive conclusion; an omission which I am unable to supply from having had no opportunity of perusing the original paper. We are not informed *how* the spurred rye was taken by the persons who were seized with the above complaint, nor on what grounds it was attributed to the use of this substance; we are not even told what evidence there was that these persons *had taken* unsound rye; so that we are at a loss to know whether the *existence* of this cause was distinctly ascertained, or merely assumed on hypothetical grounds, as affording a more probable explanation of the disease than any other. Notwithstanding that we are thus left in the dark, with regard to the ground on which the affection was pronounced to arise from this cause, I think there is enough in the preceding statement to authorise the opinion, that the disease in question was not a disease produced by unsound rye; and further, to authorise a suspicion that it arose from the mode of living, &c. prevalent in the prison, and was similar in nature to that which lately ravaged the General Penitentiary at Milbank. The disease produced by ergot is a chronic inflammation of the lower extremities, terminating in gangrene. It always com-

mences at the toes, climbs slowly upwards, destroying both soft parts and bones as it ascends; and the limb, if the patient survive, is either separated by nature, or must be removed by art. Now had the patients in the New York Penitentiary been labouring under disease from rye, we should certainly have met with the symptoms produced by that poison, in at least *some* of the cases. But we are expressly informed that out of the thirty patients affected by the anomalous disease in question, *not one* had any gangrene or inflammation of the lower extremities. Not only then was the peculiar form of disease which the ergot engenders, absent in all the thirty cases, but the symptoms under which they all laboured were such, as this substance was never before charged with producing.

Although the account given in the above extract, of the New York Penitentiary disease, be not sufficiently complete to enable me to pronounce a decided opinion on its nature, I think it affords good grounds for presuming that it was analogous to the disease that occurred at the Milbank Penitentiary. The latter endemic, as is well known, occurred under three different forms or characters, the dysenteric, assuming the characters of dysentery; the typhoid, resembling typhus; and the scorbutic, resembling land scurvy, or *purpura hæmorrhagica*. These three sets of symptoms appeared sometimes distinct, at other times they were combined in the same individual. It is in the latter, the scorbutic or hæmorrhagic form, that the endemic of the New York coincides with that of the Milbank Penitentiary. The formation of small livid spots about the feet, extending upwards; the hæmorrhage from the gums; ulceration of the mouth, and the ecchymoses discovered by dissection in the intestines, are features common to both; and, together with the extreme fatality of the disease, its endemic character, and the analogous situation of the sufferers in both instances, furnish a strong presumption of identity. Although no mention be made of diarrhœa in the preceding report, the ecchymoses found in the large intestines incontrovertibly indicate a disposition to the dysenteric form of the disease, and render the analogy still more complete.

In the absence of proper data it would be useless to push these observations farther. My principal object in writing is to elicit from some of your North American correspondents, the full information which is evidently required to clear up this matter. I shall only add, that the result of an enquiry, if it prove such as I have ventured to anticipate, will not only throw interesting light upon an obscure part of pathology, but may lead to results of some importance in a civic point of view.—I am, &c.

SURGERY.

Transfusion of Blood.—Twelve months have not yet elapsed since the first operation of transfusion for puerperal hæmorrhage took place in this country. Within that short period it has been resorted to no less than seven times. Five of the patients have recovered; two have not.

That the proposal of an operation, of a character so bold and unique, and for a disease hitherto considered beyond the pale of surgery, should have excited some discussion and difference of opinion, was naturally to be looked for. Scepticism was at first justifiable, and men of prudence would, of course, reserve their judgment for the evidence of facts; but we confess we were not prepared for the violence and illiberality which, in the course of the controversy, have been manifested by several of the opponents of this measure; a violence which, in our opinion, was totally uncalled for, and seemed to savour more of party spirit than the desire for truth. We think the opponents of transfusion have had the worst side of the question, from the very outset of the controversy to the point at which it has now arrived. The general principles on which they have opposed it are as futile as the individual objections they have urged against it have proved contrary to fact. We here subjoin the history of the two last cases that have occurred; the first of which had an unfavourable, and the second a favourable result.

Case of Uterine Hæmorrhage, occurring in a Patient of the Middlesex Infirmary, in which Transfusion of Blood was employed unsuccessfully. By GEORGE JEWEL, Esq.*

"About two o'clock on the morning of Friday, the 9th instant, a woman, of small stature and delicate constitution, who had previously been the subject of several very severe labours, was delivered, by the natural efforts, of a small dead child, after a difficult and protracted labour. There being some discharge of blood, the placenta was removed, without any obstacle, a few minutes after the birth of the child. Within half an hour the patient was seized with rigors, and complained of cold; and, upon examination, I found that a large quantity of blood had been effused, that rapid respiration and coldness of the extremities had supervened, and that the pulse was not perceptible at the wrist. Forty drops of laudanum, and a drachm of Sp. Ammon. Aromat., were administered; and Mr. Allan, of Leicester-square, was sent for. Upon his arrival, the hæmorrhage had ceased, at least externally; and the uterus, though not contracted into a hard tumour, did not appear to be distended. Pressure was made upon it by means of a band tightly applied round the body. Meanwhile the ghastly and sunken appearance of the patient's countenance—her inability to remain a moment in any posture—her pushing off the bed-clothes—desiring to be raised up—

* London Physical and Medical Journal, Aug. 1826.

tossing about her arms—and rapid breathing, seemed to threaten immediate dissolution. Eighty drops of laudanum, with a table-spoonful of brandy, were given in a little gruel, with the view of tranquillizing the patient, and of inducing a disposition to slumber; which, however, was interrupted in the course of five or ten minutes, by a return of the irresistible desire to change her position, tossing of the arms, and other alarming symptoms. The laudanum was, therefore, repeated in smaller doses, with the addition of a little brandy and gruel, every five or ten minutes, as the symptoms demanded.

"As it was possible that hæmorrhage might be going on internally, an examination was instituted by introducing the hand; but only two inconsiderable clots of blood were found within the uterus. These were removed, and a pillow, rolled firmly up, being applied over the belly, was bound tightly in that situation by a broad band round the waist.

"The attempts to support the patient by the frequent repetition of laudanum and brandy, with the addition of carbonate of ammonia, having been continued for four or five hours, without improving the patient's condition; and the pulse being scarcely perceptible at the wrist, while the extremities had become cold, and the whole surface bedewed with a cold clammy moisture, the operation of transfusion suggested itself, as still affording a chance of saving the patient's life. Mr. Boyle, the other surgeon of the Infirmary, was sent for, and he concurring in the propriety of the operation, it was performed with as little delay as circumstances would admit.

"No vein could be found at the bend of the arm large enough to admit the small ivory tube of the syringe with which we were provided; and therefore the right external jugular vein was opened, and the tube being inserted, the syringe (which contained three drachms) was filled with blood, drawn from the arm of the patient's husband, into a small bason, which was placed within a larger one containing warm water; and due care being taken to expel every particle of air from the syringe, the blood was very gradually and gently injected through the tube into the jugular vein. The syringe was filled and discharged sixteen times in the space of about twenty minutes; but as, in turning up the point of the instrument, to expel any air which it might contain, some blood escaped each time, it was calculated that little more than four ounces were actually thrown into the vein. During the operation, the patient complained of being sick, and, towards the conclusion of it, the desire to change her posture became irresistible, and by her turning her neck, the tube was displaced. With the exception of sickness, not the slightest deviation in the previous train of symptoms was produced.

"There was now every indication of approaching dissolution, and within a quarter of an hour from the termination of the operation, after several long sobs, she expired.

"Permission was not obtained to examine the body until Monday afternoon, (the 12th.) Although the greatest care had been taken to prevent air from entering the vein during the operation, yet the possibility of some having been drawn in, (during the momentary removal

of the finger from the end of the tube, to allow the point of the syringe to be inserted into it,) and thus perhaps contributed to accelerate the death of the patient, having been suggested, attention was especially directed to ascertain the fact. With this view, the superior and inferior vena cava, and the pulmonary artery were secured with ligatures; the heart was then removed from its situation, and immersed in a bason of water. A tumbler, filled with water, being held inverted over the heart, the latter was punctured, and on being pressed with the hand, a few minute bubbles of air escaped into the tumbler—in quantity not amounting to a drachm. The heart contained very little coagulated blood. The uterus was quite empty. The antero-posterior diameter of the pelvis was barely three inches and a half, and the other dimensions were proportionally small. The promontory of the sacrum formed a sharp angular projection.

"It may be a question whether the small quantity of air found in the right ventricle of the heart was the product of putrefaction, or the remains of a larger portion of injected atmospheric air, the rest of which had been carried into the circulation?—Without pretending to determine this, and the numerous other interesting inquiries which the case suggests, I deem it a duty to submit this succinct statement to the consideration of the profession, as it can only be by an unreserved communication of such facts that a just estimate can be formed of the value of the operation of transfusion, as a means of saving life under circumstances where other measures have proved unavailing. The operation itself appears a reasonable one; at the same time, I cannot help expressing considerable doubt as to the propriety of anticipating any decidedly favourable result from the introduction of a few ounces of blood into the system of a patient sinking from a loss of several pounds. This doubt, however, is to be determined by general experience, and certainly not by a few successful or unsuccessful cases."

Whilst we honour the candour with which the preceding case is detailed, we are compelled to admit, that in the manner in which the operation was performed, the plan of transfusion *had not a fair trial.* In the first place, the syringe used was much too small; it should have held two ounces instead of two drachms: and, secondly, the nozzle of the syringe should have been inserted directly into the vein, and not into an intermediate tube. It is evident that at every injection (amounting in all to sixteen) the air contained in this tube must have been forced into the vein; an occurrence which, in every other operation, the utmost care had been taken to prevent.

The other case, to which we have alluded, occurred to Mr. Brigham, of the Lock Hospital, Manchester. He thus relates it—*

"On the 8th of May I attended Mrs. Robinson, who was in labour of her eighth child. She is 40 years of age, and of a delicate habit. The labour was easy and natural, and she was delivered about eleven

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* Edin. Journ. of Medical Science, No. III.

o'clock in the forenoon of a fine healthy male infant. The placenta was expelled in a quarter of an hour afterwards, without any interference being required, and without any hæmorrhage following.

"There was nothing worthy of remark in the course of the delivery, except that the patient appeared more dull and heavy than was her usual manner, and that she did not make those anxious inquiries respecting the progress or termination of her labour, which females in such situations are generally accustomed to express. I believe she did not speak to me during the whole of my stay, yet I left her about noon composed and easy.

"About two in the afternoon, however, the patient complained of violent pain in the back, expressed a wish to get out of bed, and was slightly convulsed. This was followed by sudden and most alarming hæmorrhage, which must have partially continued for some hours; for being engaged in the country, I was not able to visit her until six *p. m.* I then found her perfectly senseless, her face sunk, pale, and exhausted, her expression particularly anxious, the extremities quite cold, the whole surface of the body damp, and deprived of warmth, and the pulse but just perceptible. The flooding at this period had entirely ceased.

"I immediately took the usual means to restore her. She was actively treated, being forced to swallow, at short intervals, considerable quantities of light nourishment, warm milk, brandy, and stimulating draughts, along with carbonate of ammonia, while warmth was applied to the extremities, &c. &c. But, although all the means were employed in succession, which are generally resorted to on these alarming occasions, there was not the least benefit apparent, nor the slightest sign of returning animation. At the termination of an hour after these remedies, she appeared sinking; she continued insensible, and unable to utter a word; her breathing was short and hurried; her skin cold and damp; her face deadly pale and sunk; there was a constant and unwearied jactitation of the limbs; her pulse at the wrist was, at this period, quite imperceptible, and life appeared to be ebbing fast away.

"I was now anxious, as the only means of saving my patient, to try the operation of transfusion, as it has been lately revived and recommended; and, on communicating my intentions to my valued friend, Mr. Jordan, who resided near the place where I was engaged, he, with his usual zeal and kindness, instantly accompanied me, along with Dr. Hibbert, who was at the time at my friend's house, and Mr. Blundstone. To these gentlemen I ought to express my acknowledgments, not only for the interests they shewed for the success of the case, and the advantage of their opinion on the great propriety of the experiment, but for their valuable assistance during the operation. The proposed plan of treatment was consented to by the husband and relatives with a submission and confidence which, on this anxious occasion, were truly gratifying; and as the poor woman, who continued quite unconscious to all our proceedings, grew rapidly worse after our return, the operation was immediately commenced.

"The syringe employed (a very inconvenient one for the purpose) holds about two ounces. On injecting the first syringeful, and after a short interval, the second, no change was evident, either on the pulse or otherwise; but after the third charge had been thrown in, the pulse in a few minutes was certainly affected, and an alteration was observed in the countenance and general appearance. The process was continued, with intervals of ten and twenty minutes, until ten or twelve ounces of blood had been injected.

"It was now apparent to every one present that a decided improvement had taken place in the state of the patient. She appeared revived, the breathing was much less oppressed, the pulse was becoming distinct, though still very quick and tremulous, and she was able to speak, which she had not done for six hours before.

"Although the state of my patient was very satisfactory, and made a strong impression on my mind of the value of the remedy; yet from the alarming hæmorrhage, and the excessive exhaustion which had taken place previous to the operation, as well as the slow advance towards a state of safety, I entertained but slight hopes of ultimate success, particularly when her situation at this period was compared with the remarkable cases lately recorded. I left her, however, at 12 o'clock *p.m.* certainly much improved, and with the conviction in my mind, that, if the operation of transfusion had not been employed, she would ere this have sunk beyond all human aid.

"It may here be proper to notice rather a singular phenomenon which was repeatedly remarked after the first four ounces of blood had been thrown in. It may probably excite some interesting inquiries.

"Immediately after each syringeful of blood was injected, the pulse, feeble as it was, appeared to faulter still more, and become rather more oppressed; at least it was quite clear that it was not raised, nor had become firmer in its beat; but, after a lapse of five or ten minutes, it recovered its beat, became more firm, and evidently demonstrated the effect of the injection on the general circulation.

"On visiting Mrs. R. at eight the following morning, I found her in a promising state; she was in a composed sleep, having been so since four in the morning. Her skin was warm, her face was slightly flushed, and the pulse 120. She had taken freely of nourishment, had expressed herself to be easy, and had called for some warm gruel. There was a very slight oozing from the uterus.

"I shall next observe, that, during the operation, in consequence of some little obstruction to the process occurring in the vein first opened, it was necessary to open a vein in the second arm. In both arms, immediately above the place where the veins were punctured, considerable inflammation arose. But by soothing applications, warm evaporating lotions, &c. the tension and swelling in the left arm subsided in a few days. The inflammation in the right arm, however, ran very high, and a small abscess formed at the bend of it, which was allowed to open spontaneously, and was very soon healed.

"I ought to make a few remarks here on the mode of performing

the operation of transfusion, which, though so exceedingly simple, stands in need of much improvement. In laying bare the vein at the bend of the arm, for the purpose of introducing the pipe of the syringe, I would, in any other case of the same kind, certainly act differently. After having carefully divided the skin, and exposed the vein (allowing it even to bulge through the skin and integument), I would compress it firmly by the fingers of an assistant, both above and below the point intended to be punctured. I would then open the vein, pass a small probe at each extremity, and introduce the pipe of the syringe (which should be made of very fine elastic gum) into the opening of the vein, before the fingers of my assistant employed in compressing it were removed.

"By following this or a similar plan, the only difficulty in the operation would be removed; for if this caution be not observed, immediately upon the vein being opened the blood flows over the parts (and in these cases we have not a drop of blood to lose), so as to obscure the opening into the vein, and render the introduction of the pipe of the syringe difficult and uncertain."

*New Cataract Knife**.—Although the operation for cataract by extraction of the lens has now been in use for the greater part of a century; and though, during that period, much talent and ingenuity have been exerted in bringing its manipulations towards perfection, it is still admitted, by general consent, to be one of the most difficult and precarious operations in Surgery. Admitting the *procédé operatoire* to have received much improvement since the days of the old Wenzel, it may be fairly questioned whether the qualification of having destroyed a hatful of eyes, which the Baron asserted to be a necessary preliminary to attain skill as an operator, be not as generally fulfilled now as then. Were any proof required of the difficulties alluded to, beyond that of daily observation, both in hospital and private practice, even in the metropolis, but chiefly in provincial situations, we need only turn to the writings of the most celebrated extractionists themselves, as well as of those surgeons whom the dangers and difficulties of extraction have induced to prefer the more imperfect but less hazardous operations with the needle.

The form of extraction-knife recommended by Beer, and now generally employed in this country, although perhaps justly entitled to preference, is liable to many inconveniences, part of which it shares in common with its predecessors, and part are the result of the peculiar principle on which it is meant to act—that of cutting itself out. Having long been sensible of these imperfections, Professor Iäger, of Vienna, himself an experienced operator, son-in-law and

* A short Enquiry into the Principal Causes of the Unsuccessful Termination of Extraction, by the Cornea, with the view of shewing the superiority of Dr. F. Iäger's double knife over the single knives of Wenzel and Beer. By Charles Loudon, Esq. Surgeon. London, 1826, with an Engraving.

successor to Beer, has introduced into practice a new extraction-knife, similar to a certain extent in principle to that of Beer, but with an additional contrivance adapted to meet certain difficulties in the operation, against which Beer's original knife provided no remedy. Iäger's knife, which has excited much attention among the German ophthalmologists, has heretofore been unknown in this country, and we are indebted to Mr. Loudon's *brochure*, for its first introduction to the notice of English surgeons. The new instrument consists in the first place of a common Beer's knife; to this is added a second blade of the same form, but considerably smaller, and the flat side of which lies in close contact with that of the principal blade. This second blade is moveable, being connected with a small button screw in the handle, by pressing which, it is made to slide forward along the flat surface of the larger blade. In the retracted state (in which the knife is introduced) no part of the margin of the smaller blade extends beyond the margin of the larger, but when pushed forward its cutting edge descends considerably below that of the other.

"It is introduced," says Mr. Loudon, "in the same way as Beer's knife, not parallel, but nearly perpendicular, to the cornea, and afterwards carried across the eye, exactly like the single knife, with the blunt edges following the ideal line already spoken of, and with the external side of the fixed blade parallel to the iris, and at the usual distance from the junction of the cornea with the sclerotica. When the point of the greater knife has transfixed the cornea at the inner side, pressure is made on the button head with the thumb; the smaller knife is, in consequence of the pressure, pushed forward, while the greater keeps the ball steady; and thus the operation is finished. A needle is then introduced to lacerate the capsule, and the operation concluded by gentle pressure on the ball, if necessary, to displace the lens from its natural situation.

"In employing the double knife, we can use it as we would a Beer's knife. After the counter-puncturation is made, we have a support for the ball in the greater knife, while the cut is performed by the smaller. There is no necessity for dragging forward the eye, to enable the operator to complete the incision. This instrument has little or no chance of wounding the parts at the inner angle. If the knife be fitted to the cornea, there is no danger of making a smaller cut than what is necessary for the extraction. There is less of the aqueous humour discharged previously to the iris being out of danger. The edges of the wound are smoother and more regular. The eye is prevented from going nearer the inner angle than it ought to do, when pressure inwards requires to be made, as in old people with hard corneæ. And in those subjects where there is a disposition to expel the vitreous humour, we may, according to the mode practised by Mr. Alexander, calculate to a nicety how much of the incision ought to be left unfinished until the irritation has subsided."

The new Corneatome is evidently founded upon a strictly scientific and recognized principle; and the contrivance of the small moveable

blade to cut out the large fixed one, by which that principle is carried into effect, we think extremely ingenious. Being strongly impressed with the difficulties and precarious results, even in the most practised hands, of the usual mode of extraction, we cannot but regard every attempt to impart facility and certainty to the operation as peculiarly praiseworthy; nor are we certain to have met with any attempt at improvement in this department which, whether we consider its own intrinsic merit, or the high authority by which it comes recommended, holds out a stronger promise of success than the present. The real utility of the instrument must be decided by actual trials, and we have no doubt that it will meet with the attention it deserves from those who practise the operative surgery of the eye. Mr. Loudon has pointed out with much ability and candour, the different causes which impede and sometimes defeat the operation of extraction, as commonly performed, and particularly the desiderata in Beer's and Wenzel's knives, which he thinks the new instrument calculated to remedy.

Mr. Bell's *Case of Popliteal Aneurism, in which the Femoral Artery was found to be divided into two Trunks, which again became re-united where the Vessel passes through the Tendon of the Triceps Muscle.*

"February 18th, 1826.—— Adams, a large and muscular negro, was admitted into the Middlesex Hospital, having a pulsating tumour situated at the upper part of the calf of his left leg, just below the knee-joint. He did not know his age, but he seemed to be between forty and forty-five. He first perceived the tumour four years ago; it was then small, and not attended with pain or inconvenience. About a month ago the swelling suddenly became larger, and he experienced great numbness in the leg and foot.

"The situation of the tumour is unusual, being not properly in the popliteal cavity, but further down. It is more superficial than a common popliteal aneurism, and rises out between the heads of the gastrocnemius. The artery at the groin is very large, and easily felt. On compressing it, the pulsation of the tumour can be stopped, but the pulsation cannot be stopped by pressing on the middle of the thigh. For these reasons, Mr. Bell stated that he should tie the artery lower in the thigh than usual.

"*Operation.*—On Monday, 20th February, the operation was performed. It was attended with no unusual circumstances. The artery was easily found by lifting the edge of the sartorius muscle, and neither the vein nor nerve were exposed. After the ligature was applied, the pulsation of the artery against it was distinctly observed by all who were near the patient. As an arterial branch arose from the trunk close above the ligature, it was purposely cut across. It threw out its blood with great force, and was secured.

"The moment after the artery was tied, Mr. Shaw, who had his hand on the tumour, said that the pulsation was stopped; and, on asking the patient what he felt, he immediately answered, 'There is no

more painful beating.' But Mr. Shaw, keeping his hand on the tumour, felt the pulsation distinctly return in a few seconds: and so distinct was the pulsation, that he remarked it to Mr. Bell; who, after putting his hand upon the tumour, and observing that the ligature was moved by the regular pulsation of the artery, replied, 'Well, be it what it may, I shall do no more: we have done all we ought to do.' The edges of the wound were brought together with short adhesive straps, and the patient was carried to bed. On examining the tumour half an hour afterwards, the pulsation was nearly as distinct as before the operation, and quite different from that *thrill*, or slight pulsation, which is so frequently found after this operation.

"23d.—The pulsation of the tumour stopped this morning (the third after the operation). Hitherto the patient had not suffered in consequence of the operation: but he is now ill and feverish; he has a cough, and complains of pains through the body; the wound is not uniting kindly. A very remarkable impression seems to have been made on his constitution, and this at the very time of the pulsation of the tumour stopping.

"24th.—He is very ill. The short cough, which he has had for some time, is much worse. He has pain; but whether in his stomach or chest cannot be exactly determined, from the indistinctness of his account of it. Six ounces of blood have been taken from his arm; and he is ordered to have an opiate linctus, to relieve his cough.

"26th.—Gradually sunk, and died this morning. The whole line of the sartorius muscle had become swollen and tender, and a serous effusion distilled from the wound.

"During the progress of this case, no thermometrical observation was made on the heat of the limb; which throughout felt hotter than the other. It was obvious that the circulation through it was completely restored.

"*Dissection.*—The sartorius muscle, from end to end, was affected with inflammation, of an erysipelatous character, which had spread along the whole course of its sheath. The muscle itself was swollen, and tumid with serous effusion.

"Just below the part where the profunda was given off, the femoral artery was divided into two nearly equal branches. These ran down parallel to each other, to the part where the artery passes through the tendon of the triceps muscle: here they reunited. The ligature was found on the more superficial artery, a little above this reunion.

"At his next clinical lecture, Mr. Bell made the following remarks: There was no delay nor difficulty during the operation; the sartorius was lifted up, the fascia covering the artery opened, and the sheath of the artery dissected, by scratching with the point of the knife, and carrying the back of the knife forward. If this had not been done with precision, we see that very awkward circumstances might have occurred by cutting the deeper artery at the point of reunion.

"The surprise is now, not that the tumour should have continued to beat, but how it should have ceased to beat by a ligature being put only

on one of the arteries, either of which was fully sufficient for the circulation of the limb.

"It was Mr. Bell's opinion that the unfavourable termination in this case arose not from the constitution sympathising with the condition of the tumour, but in consequence of the very peculiar condition of the sartorius muscle, and the fever which it produced; and that to the weakness of the circulation thence arising, the coagulation of the blood in the aneurism, and consequent stopping of its pulsation, were to be attributed.

"This case was brought forward by Mr. Bell, in his lecture before the College of Surgeons, on Tuesday, 9th May, in illustration of the pathology of aneurism. He stated that, in the operation, the effect of a ligature applied on the main artery is not, as is generally supposed, to prevent the blood from flowing through the sac. For the circulation through the collateral vessels is so free and so immediate after the ligature has been applied, that the blood flows freely into that part of the vessel which is below the point tied, and also through the aneurismal sac. This position he illustrated by several cases; and he referred to the one we have just related, as a striking instance that it is not necessary to obstruct the passage of the blood altogether, in order to procure coagulation in the tumour. In this case, tying only one of two branches of equal size, both of which supplied the aneurism (that is to say, having cut off merely one-half of the blood passing through the tumour), was sufficient, in process of time, to allow a clot to form in the sac. The effect of our common operation, of tying the artery at a considerable distance from the seat of the disease, seems therefore to be merely to diminish the impetus of the stream of blood, by obliging it to pass by a circuitous route; and the consequence of this change is, to allow the blood in the aneurismal tumour to coagulate slowly, and finally to obliterate the passage through it."

Cases of Excision of the Ribs, by Dr. L. Cittadini, Professor of Anatomy and Surgery in the Royal Hospital of Arezzo.

Case 1.—Fr. Loddi, of Montanina, had for many years a fungus resting on the cartilages of the sixth and seventh true and first false ribs, about an inch from the ensiform cartilage. It had been repeatedly, but ineffectually removed by caustic and the knife. On his application to me in February 1820, knowing the want of success of the measures already employed, and seeing that the disease extended to the cartilages of the ribs, I proposed the total excision of the tumour, and the portions of the ribs on which it rested. The base of the fungus did not exceed two inches in circumference (query, diameter?); a portion of the integuments around it was removed, forming a circle three inches in diameter. The muscular fibres thus exposed, and chiefly belonging to the rectus and external oblique, were then detached, and the arteries that had been cut, secured. The ribs being thus exposed, the fungus was found to arise from the point of junction of the cartilages of the

* Omodei, Annali, No. iii. Marzo, 1826.

two last true with that of the first false rib. The extent of disease did not exceed two inches. By means of a blunt-pointed knife the cartilages were cut through and detached. They were then separated by a spatula from the subjacent parts, exposing a fungous substance, the laceration of which gave rise to a profuse hæmorrhage, which however was quickly stopped by the actual cautery.

The cure was accomplished in four months, and the disease did not re-appear during the time, two years, that the patient survived.

Case 2.—Fr. Boddi, of Montepulcians, in a period of high febrile delirium, seized a knife, and thrust it into the chest in the region of the heart. It passed beneath the lower edge of the left breast, through the rectus muscle, and glancing along the upper edge of the cartilage of the sixth true rib, fixed itself in the bone. The ultimate consequences were extensive suppuration, and the formation of a fistula leading to the rib. In September, 1822, Dr. Cittadini found the cartilage and part of the bone of the rib bare and rough. Having removed a considerable portion of skin, he detached all the muscles covering the carious part, which was about an inch and a half, and having cut through the cartilage with the blunt pointed knife, divided the bone with sharp nippers. The pleura beneath the portion of rib removed, was perforated in several places, by which means air penetrated, and compressed the left lung. The respiration was for the time short and laborious, but in a few hours became natural. The wound was healed in two months, and the patient has not subsequently suffered any inconvenience from it.

Case 3.—In March, 1822, Angiolo Cavalucci, of Castello, was attacked with pleurisy on the right side. The disease gave way to suitable treatment; the fever, pain, and difficulty of breathing, ceasing in about three weeks. In the course of convalescence a permanent painful swelling took place, corresponding to the junction of the cartilages of the sixth and seventh ribs with the sternum. The swelling suppurated, and left a fistulous opening leading to a caries of the cartilages in question.

In January, 1824, the operation of excising it was resorted to. Having exposed the diseased parts in the usual manner, Dr. Cittadini attempted to cut through the cartilage with the knife; but finding this inconvenient on account of the bulk of the pectoral muscle and the quantity of fat, he employed in its place the lenticular, used in trepanning, insinuating it beneath the diseased portions of the ribs, which were then removed. The subjacent pleura, which was much thickened, was torn in several parts, and blood flowed freely from the divided intercostal arteries. The cure was delayed by the presence of some fragments of bone, but was complete at the end of six months.

Case 4.—Rosa Giannini, of Citta di Castello, had for several months a fistulous sinus on the left side of the chest, leading to the third rib, which was bare and carious, for the space of an inch on the upper side of the bone, near its union with the cartilage. Other measures having

failed, Dr. Cittadini operated in July 1824, using the lenticular, for the purpose of removing the disease at the upper edge of the rib, leaving the lower part untouched. The cure was effected in three months, and as well as in the last case, proved permanent.

From these cases, Dr. Cittadini concludes, that the excision of the ribs is less hazardous than is usually imagined, and that the bleeding from the intercostal arteries may be suppressed by simple compression, without ligature, particularly when, the operation being performed at the anterior extremities of the ribs, those branches distributed to the muscles are alone concerned. The bad effects from caries of the ribs, such as extensive suppuration, fistulæ marasmus, and even death, are sufficiently known to surgeons, who may be induced more frequently to resort to the removal of the diseased portions of bone, in cases of fistulæ resisting all other modes of treatment.

Case of Amputation of the Lower Jaw. By Dr. M'Clellan, Professor of Surgery in Philadelphia.—"Mr. Joseph Brown came to this city in the month of July last, from Orange county, New York, with an enormous carcinomatous tumour, which occupied the lower part of his right cheek, and extended over a large portion of the throat on the same side. It commenced on the inferior lip, in the early part of the year 1820, and gradually extended downwards and backwards over the base of the jaw. It was very distinctly circumscribed, and presented a firm cartilaginous kind of structure to the touch. Its margin occupied almost the whole substance of the lower lip, which was drawn very much towards the right by the growth of the tumour in that direction; it then passed downwards across the cheek, over the base of the jaw, just before its angle to the throat; finally, after extending forwards below the jaw, it surmounted the right side of the chin, and terminated near the left commissure of the lips. The lower portion of the tumour which extended into the throat was less prominent than the part above; and, on a careful examination, I ascertained that it was distinctly separate from the original tumour on the face, being made up of secondarily enlarged lymphathic and conglomerate glands. The whole surface of the lip and upper portion of the tumour had been ulcerated for several months previously, from the surface of which a very offensive ichorous matter was constantly discharging. On introducing a probe through the centre of the ulceration, the subjacent bone was found to be carious; which, indeed, might have been suspected from the firm adhesion of the tumour to the side and base of the jaw. Severe lancinating pains had been experienced by the patient for a long period, and his appetite had become very much impaired in consequence of the intolerable fetor of the discharge. His strength, however, and general health, were in other respects very good. There had been no hectic fever; nor had his countenance assumed that shrunken cadaverous appearance, which is so characteristic of a constitutional affection in such cases. The disease had made but very slow progress during the pre-

ceding few months, and the pains were by no means increasing in severity. He was only forty-two years old, and felt not a little anxious to protract his life for the benefit of a rising family.

"On the 28th July, I performed an operation for his relief, in the hall of the infirmary of Jefferson Medical College, in presence of the professors and pupils of that Institution. An incision was commenced at the left commissure of the lips, and carried downwards, over the symphysis of the jaw and right side of the thyroid cartilage, to the anterior edge of the sterno-mastoid muscle. A second incision was next carried from a little above the right commissure of the lips, around the opposite margin of the tumour, and across the angle of the jaw, until it reached the termination of the former incision. The whole mass of the tumour was then dissected downwards from the surface of the jaw, and from the throat beneath, until all the parts that were included between the two incisions had been removed. By this dissection several enlarged lymphatic glands were removed from the throat, together with the original tumour on the cheek.

"After securing the facial and coronary arteries, I next proceeded to examine the condition of the jaw, which was deeply affected with caries. Having satisfied my assistants that it was absolutely necessary to remove it, I divided it by the metacarpal saw in two places; first, at the symphysis, between the front incisors; and, secondly, a little before the angle, between the second and third molares. On dissecting out the intermediate piece of bone, the facial artery was again divided and secured; after which three more indurated, although not much enlarged, lymphatic glands were removed from the throat. As the surface of the submaxillary gland appeared to be discoloured and tumefied, all that portion of it which lay on the lower surface of the mylo-hyoideus muscle was removed; the remainder, which accompanied the excretory duct above the same muscle, being evidently sound, was left undisturbed. Of course, the facial artery was again laid open by this part of the dissection, and secured, for the third time, much nearer its origin than before. Although the sublingual gland was so fully exposed that it protruded very much, it was not deemed necessary to excise it, on account of its healthy appearance.

"The soft parts being now satisfactorily disposed of, I proceeded to examine the posterior extremity of the bone, the cancellated structure of which appeared somewhat discoloured, and bled profusely. As its condition was so suspicious, and as it moreover formed an inconvenient projection, which the integuments could not be made to cover, I applied the saw again just at the angle, and removed about an inch more of the bone, together with the last molar tooth which was implanted in it. The integuments were then approximated, as much as possible, by three interrupted sutures, by means of which the cut extremities of bone were brought much nearer together than before; and the size of the wound also was greatly diminished. Some strips of adhesive plaster, and pledgets of patent lint, secured by a head bandage

completed the dressing; after which the patient was able to walk about with great ease.

"In two days after the operation, as the sutures produced a painful degree of tension, and displaced the two portions of bone very much, I removed them, and trusted to the adhesive straps and bandages alone for drawing the opposite sides of the wound together. From that time he complained of no particular inconvenience, and continued to recover very rapidly. In less than ten days the cavity in the throat was entirely closed, and the wound in the face was greatly contracted in size. On the third week he was so nearly recovered from the effects of the operation, that he insisted on returning to his family. The granulations which had sprouted up between the two extremities of bone were then almost cicatrised over in continuity with the integuments, and the deformity was surprisingly diminished.

"A letter, dated Orange county, September 2d, has lately been received from Mr. Brown, which states that the parts are now almost entirely healed, and that he has the full power of mastication and articulation.

"As it is by no means impossible that there may eventually be a return of the disease in this case, I do not presume to offer a complete history of it in the present communication. The final result will be stated in a paper which I shall hereafter publish, on the probability of affording relief by operations for the removal of specific tumours.

"In conclusion, I cannot avoid expressing some degree of surprise at the fact, that intelligent surgeons could ever have anticipated the prevention of hæmorrhage, in such operations as I have detailed, by previously securing either of the common carotids. The anastamoses between the branches of all the main arteries of the head are so large and frequent, that I question whether the division of any one of them would not be attended with a troublesome hæmorrhage, even after the closure of both carotids. In every case in which the details have as yet been published, it appears that all the divided arterial twigs required the application of a ligature, whether the circulation of blood through their parent trunk had previously been intercepted or not."—(*American Medical Review.*)

MIDWIFERY.

New Mode of Extracting the Placenta.—We are somewhat astonished that our Gallic brethren, who are so doatingly fond of formal divisions and endless subdivisions, and so prolific in the invention of suitably magnificent titles, have not hitherto defined in all the pride of logic, nor dignified with etymological honours, a new and rising

department of operative surgery, which we shall make bold, till furnished with a better, to designate by the title of Hydrostatic Surgery; a term intended to denote that class of surgical manipulations which are founded on the mechanical properties of fluids instead of solids. Many recent and important inventions belong to this class; such as the extraction of poisons from the stomach by the syringe—from the cellular tissue by the cupping-glass—the inflation of the lungs—the various contrivances for dilating the bladder and urethra by the pressure of fluids—for washing down calculi by a continued current of water—and the like. For a still more recent addition to hydrostatic surgery, we are indebted to the inventive genius of Dr. Benoist Mojon, a physician of Genoa. We allude to a contrivance for extracting the placenta from the womb, when hæmorrhage has occurred after delivery; intended to supersede the usual mode of extraction, by the introduction of the hand. It consists simply in injecting the placenta with a sufficient quantity of cold water, acidulated by the addition of a small proportion of vinegar. Should any blood be lodged in the vessel it must be squeezed out as completely as possible, after which the fluid is to be thrown in by a syringe, with a smart and forcible impulse. We are informed that this operation has been resorted to for some time past with uniform success; the placenta being speedily detached and without any bad consequence. The plan has also been extended to cases where retention of the after-birth is owing to torpor of the womb. The adhesion is destroyed by the mechanical distention of the structure of the placenta, which injection has proved to be capable of great extension; the impression communicated to the adherent surface of the womb must also tend to excite its contraction, and thereby facilitate its separation from the placenta. When the first injection does not succeed, it must be repeated. A demilitre (about ℥xv.) is the quantity recommended for injection at one time.

MEDICAL JURISPRUDENCE.

Feigned Diseases.—The subject of simulated or wilfully excited disease is not only interesting and curious in a general point of view, but is practically of the utmost importance to surgeons engaged in the public service, who, in the exercise of their ordinary functions, are daily exposed to this species of imposition. The account given of feigned diseases, chiefly as met with in the navy, by Mr. Copland Hutchison, in the last edition of his "Practical Observations on Surgery," &c. is drawn from extensive personal observation, and forms a more detailed history of this form of imposture, as practised in the British navy, than

has heretofore been published. The value of these observations prohibits us to pass them over in a cursory way, whilst the style in which they are written, scarcely admitting of abridgment, will render our extracts more extensive than usual, or than we should be inclined to make on a subject which had smaller claims on professional attention. Mr. Hutchison commences with—

"Ulcers.—There is no species of imposture more practised by seamen, in order to obtain admission into naval hospitals, and eventually to evade the service than that of making ulcers on the legs, or of extending and keeping open such as already exist.

"The means pursued by these men are various. Such ulcers of this class as have come under my observation have been produced in one or other of the following ways:—By cutting off a piece of skin with scissors, or with a knife; by the application of a blister, or quick-lime, to the sound skin; or by the use of a mineral acid. When any part of the surface has been thus abraded, the sore is kept open and extended by the re-application of some of the above-named articles, or by the use of common copper coin. But of all the substances resorted to on such occasions, that of acids is by far the most difficult to detect; for the impostor is often so alert, that he removes the surgeon's dressings during a certain period, and occasions the acid to act upon the parts in dressings of his own, substituted in their stead; and, after the desired effect is produced, the ulcer is well washed, and the former dressings and bandages re-applied, with a care and cunning which renders a discovery very difficult. Other substances than the acids may sometimes be detected, by strictly observing the surface of the ulcer and the old dressings.

"I recollect amputating the leg of a man at Deal hospital, for a caries of the tibia, extending to the ankle-joint and upwards to the knee. This man asserted that he had never 'played any tricks' with his leg, although I was persuaded and asserted that he had; and in this he persisted until the day after his leg was removed, when I showed him a piece of copper coin, which I had that morning discovered on dissecting the amputated limb, imbedded between the gastrocnemius and soleus muscles, nearly three inches from the margin of the ulcer. The unfortunate man then candidly stated, that he had thrust the piece of money into the ulcer about nine months before, with the view of obtaining his discharge, by invaliding; and he lived to lament his imprudence.

"As a remedy or preventive against such impostures, it has long been a practice in the navy and army to trust to a well-applied bandage, from the toes upwards to the knee, to seal the end of the roller with wax, and to impress it with the surgeon's own seal; but it was not long ere I discovered that this method was totally inefficient, by frequently observing a coagulum of blood upon the surface of the ulcer, and the surrounding skin in a state of inflammation, notwithstanding that the bandage and

dressings remained apparently entire and untouched. This occurrence was rather difficult to account for, unless by the person striking the ulcerated part against some hard substance. I afterwards, however, discovered, and it was confessed to have been done by introducing a needle or pin through the bandage, and thus scratching the surface of the ulcer.

"To guard, therefore, against this new device, I had a certain number of strong oaken boxes made, in the shape of a large square boot, to come up about four or five inches above the knee, the short thigh part of the boot forming with the leg an obtuse angle, so that the muscles of the diseased leg might be preserved in a relaxed or bent position. The upper end of this wooden boot was closed by a square piece of the same strong wood, with a circular hole cut in it, to suit the circumference of the thigh, which was lined with list or leather, to prevent the cut edge of the wood from giving pain or uneasiness to the wearer. This boot, so made, is cut down the middle to the toe-part; hinges are then put on, and a lock, which cannot easily be picked, attached to the centre of the leg. Two narrow slits are then made through the sole of the boot, one on each side of the hollow of the foot, through which a leathern strap is passed, for the purpose of being attached to a circular one round the ankle of the impostor, by means of two buckles, which, being inside, will completely preclude the possibility of the person's drawing his leg through.

"When such characters came under my care, in Deal hospital, this was the plan pursued; and I never failed to heal all these ulcers, after this measure was adopted.

"In addition to what has been stated, it becomes necessary to mention that I had painted upon the lids or fronts of these boxes, in large letters, '*Punishment for Impostors;*' and in each ward, when they were not in use, we had two of them placed in the most conspicuous part, as a warning to all newly-admitted patients.

"This, and other plans adopted, so completely succeeded in detecting impostures, which at this time were very common, that it soon spread among the crews of the different ships composing the grand fleet, then employed in the blockade of the Scheldt, as well as among the Downs squadron, under the distinct command of the port admiral; and, eventually, so notorious did Deal hospital become for the detection of imposture, that latterly it was a very rare occurrence for such characters to be presented for admission; and by which means those fleets, then of such importance to the vital interests of Great Britain and her allies, were kept better manned, and therefore more efficient, than they could possibly have been, had the seamen found it easier to practise their deceptions upon the surgeon.

"DIARRHŒA.—I have known diarrhœa and dysentery many times induced in hospital practice, where the individual found that he could not succeed in attaining the object of his desire, viz invaliding, by any other means; and I have witnessed, not unfrequently, such unfortunate men fall a sacrifice to their own imprudence, by inducing a disease

which they would most gladly have been relieved from at a period when perhaps it was too late. On this subject, the writer cannot readily forget the death-bed disclosures, and the pangs of conscience, he has witnessed on one or two occasions.

"The bowel affections to which I now allude can, I have reason to believe, be induced by various means; but that which was most resorted to by deluded seamen was a mixture of vinegar and burnt cork—in what proportions I have never been able to ascertain; neither can I discover in what manner the burnt cork can assist in producing the disease in question; but certain it is, that these were the ingredients most commonly had recourse to; and as certain is it, that some of the finest, youngest men in the navy have fallen victims to the use of such substances, for the accomplishment of their unhappy purposes. I have also known convicts in the Penitentiary at Milbank, previous to the late malady breaking out, both in their cells, and in the infirmary, break down, with their fingers, in their urinary utensils, a good figured or formed motion, and intimately mix it with the urine, so as to induce the belief that it was in reality a diarrhœal evacuation; but a little attention to the character and appearances, with strict watching, will in most cases lead to a detection of the imposture. The object which convicts have in such practices is to be exempted from labour, and to be kept in the infirmary, where their comforts in every way are certainly much greater than when in their cells in the prison."

In addition to the above very curious details, Mr. Hutchison has given examples of the imitation and detection of various other diseases; such as Diseases of the Heart, Fever, Contractions of the Joints, Inflammation of the Eyes, Incontinence of Urine, Vomiting, Injuries from Blows and Sprains, Epilepsy, Œdema, Hæmoptysis, Hæmatemesis, Calculus or Gravel, Spasms, and Diseases of the Stomach and Bowels, Stricture, and Hernia.

Our limits, and the pressure of other matter, prevent us from continuing our extracts in the present Number; but we will complete the subject in our next.

MISCELLANEOUS.

We learn that Dr. N. Arnot has in the Press a work on General and Medical Physics. It is on a plan which seems to us extremely good as well as novel. It is, in the first place, a system of natural and experimental Philosophy, with strictly scientific arrangement, but free from the technicalities which render the study difficult to persons unacquainted with mathematics. Besides comprising all in Natural Philosophy, which the man of general education requires to know, it has a peculiar feature which claims the especial attention of the medical enquirer. Under the head of Medical Physics, it treats of the various important illustrations of the laws of Natural Philosophy pre-

sented by the living body; of the influence of these laws in producing the phenomena of disease, and of their various applications in the employment of remedies. In pursuance of these objects it brings under review many interesting questions in Physiology, Pathology and Practice; gives an account of late improvements, both theoretical and practical; and we understand that it also contains several new suggestions. We especially approve of this plan as calculated to supply what has heretofore been a great desideratum in medical education; and from the superior acquirements of the author, both in medical and physical Science, we have little doubt that this work will be one of the most valuable that has for some time issued from the Medical Press.

Being fully convinced that the stimulus of competition is not less useful in medical teaching than in other departments, it is with pleasure that we observe the establishment of a new Medical and Surgical School in the centre of the Metropolis. From the character and zeal of its teachers, we have no doubt it will take a high rank among our Seminaries of medical instruction.

ROYAL COLLEGE OF SURGEONS IN LONDON.

BYE-LAW OF THE COLLEGE, AND STANDING ORDERS OF THE COURT OF EXAMINERS,

Relating to the Age and Professional Education of Candidates for the Diploma.

Bye-Law, Sect. xvi. § 1.—No person under twenty-two years of age shall be admitted a Member of the College.

Standing Order, 1. The only Schools of Anatomy and Surgery recognized by the Court are, London, Dublin, Edinburgh, Glasgow, and Aberdeen.

2. Certificates of attendance upon the Chirurgical Practice of an Hospital, will not be received by the Court, unless such Hospital be in one of the above recognized Schools, and shall contain, on an average, one hundred patients.

3. The Court will however receive, as testimonials of education, Certificates of attendance on provincial Hospitals, containing, respectively, one hundred patients, provided a Student shall have previously attended two courses of Anatomical Lectures, and two courses of Dissections, in any of the recognized Schools of Anatomy. But the Court require, that the term of attendance on such provincial Hospitals shall be of twice the duration of that required at Hospitals in any of the recognized Schools of Anatomy.

CANDIDATES will, conformably to the above Bye-Law and Standing

Orders, be required respectively, to produce, prior to examination, Certificates—

1. Of being twenty-two years of age.

2. Of having been engaged six years, at least, in the acquisition of professional knowledge.

3. Of having regularly attended three Winter courses, at least, of lectures on Anatomy and Physiology; delivered at subsequent periods: and also one Winter course, at least, of lectures on Surgery.

4. Of having performed Dissections during two or more subsequent Winter courses.

5. And of having diligently attended, during the term of at least one year, the Chirurgical Practice of one of the following Hospitals, viz.

St. Bartholomew's, St. Thomas's, the Westminster, Guy's, St. George's, the London, and the Middlesex; in London. The Richmond, Steeven's, and the Meath; in Dublin. The Royal Infirmary, in Edinburgh; the Royal Infirmary, in Glasgow; or the Royal Infirmary, in Aberdeen; or of twice that term in any of the provincial Hospitals, conformably to the above Standing Order, No. 3.

Such Certificates must also express the dates of the commencement, and of the termination, of attendance on each course of Lectures, and of Dissections; and the periods of the commencement, and of the termination, of attendance of Hospital Practice.

The required Certificates must be delivered at the College ten days, at least, prior to the day on which Candidates shall, respectively, be desirous of admission to examination.

CANDIDATES under the following circumstances, and of the required age, are also admissible to examination.

Members of any of the legally constituted Colleges of Surgeons in the United Kingdom.

Graduates in medicine of any of the Universities of the United Kingdom, who shall have performed two, or more, courses of Dissection, as above specified, (No. 4;) and who shall have regularly attended the Chirurgical Practice of one of the Hospitals, as above described, No. 5.

(By Order) EDMUND BELFOUR, *Secretary.*

Lincoln's-inn Fields, 8th September, 1826.

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An Essay on Morbid Sensibility of the Stomach and Bowels, as the proximate cause or characteristic condition of indigestion, nervous irritabity, mental despondency, hypochondriasis, &c. &c. To which are prefixed Observations on the Diseases and Regimen of Invalids on their return from hot climates. By James Johnson, M.D.

An Introductory Lecture on Human and Comparative Physiology, delivered at the new Medical School, in Aldersgate-street. By Peter M. Roget, M.D., F.R.S. London, 1826, Longman and Co.

An Introductory Lecture on Anatomy, delivered at the new Medical School, in Aldersgate-street. By Frederick Tyrrel, Surgeon to St. Thomas's Hospital, and the London Ophthalmic Infirmary. London, 1826, Longman and Co.

An Oration delivered on Tuesday, February 9th, 1826, before the Hunterian Society; with Supplementary Observations and Engravings. By Sir William Blizard, Knt. London, 1826, G. and T. Underwood.

Observations on Quarantine; being the substance of a Lecture delivered at the Liverpool Lyceum, in Oct. 1825. By Charles M'Lean, M.D. Liverpool, 1824.

A Short Account of the Small Pox which prevailed at Bridport and its neighbourhood in the Summer of 1826; with remarks on Vaccination, and the degree of protection it was found to afford during the prevalence of the Epidemic. By John Strang, Surgeon. R.N. Bridport, 1826.

☞ Some notice of this interesting pamphlet in our next.

On Galvanism; with observations on its Chymical properties and Medical efficacy, in Chronic Diseases; with Practical Illustrations and Remarks on some Auxiliary Remedies. By M. La Beaume. London, 1826, Highley.

A Letter on the Medical Employment of White Mustard Seed. By a Member of the Royal College of Surgeons. London, 1826, Carpenter.

Traité de l' Opération de la Taille, ou Mémoires Anatomiques et Chirurgicaux, sur les differentes méthodes employées pour pratiquer cette operation. Par Ant. Scarpa, Traduit de l'Italien, par E. P. Ollivier, D'Angers D. M.P.

North American Medical and Surgical Journal (in Exchange), Oct. 1826.

The Philadelphia Journal of the Medical and Physical Sciences (in Exchange).

The Edinburgh Journal of Medical Science (in Exchange.)

Traité Theorique et Pratique des Maladies de la Peau. Par P. Rayer. Paris, 1826.

Medico-Chirurgical Review, No. 10, Oct. 1826 (in Exchange).

Traité des Maladies Chirurgicales et des opérations qui leur conviennent. Par M. Baron le Boyer. T. 10. Paris 1825.

THE

QUARTERLY

MEDICAL REVIEW.

Nº. I. JANUARY, 1827. Vol. I.

Art. I.—*Traité des Maladies de Cerveau et de ses Membranes.* Par A. L. I. Bayle, 8vo. Paris, 1826.

Des Causes Morales et Physiques des Maladies Mentales et des quelques autres affections Nerveuses. Par F. Voisin. pp. 418, 8vo. Paris.

Outlines of Lectures on Mental Diseases, 1826. By Alexander Morison, M.D. pp. 150. London, 1826.

It is evident, from sacred as well as profane history, that the various phenomena of insanity were all originally explained on the simple theory of the maniac being possessed of a demon, and that the means of cure resorted to, were expiatory sacrifices and exorcisms of various kinds.—This notion still prevails in the eastern parts of the world, and amongst the superstitious of Europe, nay, many in our own country, besides the eccentric Dominie, in Guy Mannering, are disposed to exclaim on an emergency, "exorciso te." Physicians, laying aside the employment of supernatural means to eject this demon, have attempted to reason him out—while others, a degree wiser, have exhausted their eloquence to prove that the mind may be affected by the body, and have arrived at the sage conclusion that the diseases of the one may be cured by medicines acting on the other. We indeed thought that this had been demonstrated long ago by the helle bore of Hippocrates; but it would seem otherwise from the pains which have been taken, by some modern writers, to set this matter in a clear light.

That the fathers of physic were fully convinced of the corporeal nature of insanity is manifest, not merely by their exhibition of medicines in its treatment, but by their assigning amongst its causes, derangement in the functions of the spleen;

of the diaphragm, and especially of the liver; the vitiated secretion, the μελαν χολη of which was regarded as a fruitful cause of mental depression and alienation. They also distinguished the various kinds of insanity, and did not fail to remark the physical as well as mental excitement by which some of them are characterized. On glancing at the writings of Hippocrates, Aretæus, Celsus, Cælius Aurelianus, Galen and others, it is evident that many of these early physicians traced the disease to the brain. The shaving of the head, and the application of fomentations, and of cupping-glasses to it, recommended by some of them, also shew that this part was regarded as the principal seat of the disease, while the general use of the lancet in acute cases, indicates their opinion as to the inflammatory nature of the affection.

If we add to the remedies just mentioned, the employment of purgatives, especially the black hellebore, of emetics, chiefly the white hellebore, of narcotics, such as hyosciamus, of the suspended or swinging couch, together with a certain moral treatment, occasional seclusion of the patient in a dark chamber, or engaging him in manual labour, or travelling—we shall have the whole of the practice of the ancients in insanity, and the principal part of that of the moderns. So little are we in advance of them on this point, that one writer on the subject gives the preference to the knowledge of antiquity, and regrets how much we fall short of it. It must be confessed, that sixteen centuries have been allowed to elapse without effecting the slightest improvement, or rather with creating obstacles to the progress of information; for what else can we consider the invention of sounding terms without meaning, and the war of words carried on by the scholiasts; the absurd theories and dreams of the chemical, mechanical, and humoral pathologists, and the profound and mystical views of the Stahlian philosophy? We find, for example, so late as the seventeenth century, the sudden immersion of the patient into cold water, a practice rarely beneficial, and in most cases highly dangerous, recommended by Boerhaave, and by such high authority converted into a doctrine of the schools. Yet on what did this opinion rest?—not on experience, but on a foolish reverie of Van Helmont, whose whimsical notion was to destroy even to their primitive traces, the extravagant ideas of the insane, which, according to him, could only be effected by bringing the patient as near as possible to a state of death, and thereby killing, slaying, and, as it were, obliterating such ideas. Extravagant in the extreme, as such a notion must appear, yet it has occasioned many a maniac to be seized neck and heels, and to be thrown into the water while in the fury of his paroxysm, then, to be plunged and replunged until death had almost put a period to the sufferings of the unfortunate patient. Pa-

ralysis, we know, is not unfrequently the result of such treatment; the indiscriminate application of which to the insane at this period of time, makes us blush for the folly of the physician. The humoral pathologists were guilty of yet greater blunders, and their errors have been handed down to still later times. We find, for example, a country surgeon who, as stated by Pinel, had exasperated the maniacal fury of a patient by venesection, declaring, like a true disciple of the humoral school, that the malady depended on the corrupted state of the blood; that it was in truth a veritable blood of folly, that it was necessary to take it all away, after which he would answer for the cure of the disease.

Although medicine, participating in the general revival of science, was in some degree rescued at the commencement of the last century, from the false theories, and absurd dogmas, with which it had been so long encumbered, yet little progress was made in the knowledge of insanity: the disease having been too generally regarded as incurable, and the wretched maniac, having been abandoned to solitary confinement, as an outcast, or committed to the brutality of keepers in private and public asylums. These institutions, however, although badly conducted at first, afforded the means of the improvement which has been subsequently effected in this branch of medical science, by bringing together so great a variety of cases, and presenting to the physician at one view the various symptoms which distinguish the different species of this disease, and thereby enabling him to appreciate the effects of different modes of treatment. Hence almost all the works on this subject, which have appeared within the last fifty years, have been written by men having the superintendance of such receptacles of the insane. This shews, in a clear light, how much more the medical art is indebted for its progress to opportunities of extensive observation, than to mere physiological reasoning; not that we would reject the latter, or consider it even in any degree less indispensible than the former, but it is nothing, and worse than nothing, without facts and observations. Amongst the works to which we have alluded, as appearing about the end of last century, are Treatises by Battie, Arnold, Faucett, Greding, Chiarugi, Haslam, Ferriar, Harper, Pargeter, Crichton, Perfect, and Pinel; and more lately by Cox, Arnold, Hallaran, Falret, Daubenton, Esquirol, Georget, Sutton, Mayo, Crowther, Hill, Reid, Spurzheim, Willis, and several others; besides the many valuable observations to be found on this subject, in the works of Cullen, Darwin, Parry and Prichard.

This is sufficient to shew the great degree of attention which has been attracted to mental derangement within the last fifty

years, which has been owing, we have no doubt, as already intimated, to the circumstance of vast numbers of patients of this class being more generally, than in former times, collected under one roof. Yet although so many treatises have been sent forth to the world, we cannot congratulate our readers on any great accession of knowledge having been added by them. Several of the works first published in England, were mere indirect advertisements of particular private establishments for maniacs; others contain some scattered observations, without any attempt at scientific arrangement, while several, especially the German, are only dextrous compilations. Many of them, however, are works of standard merit, but their authors, in general, differ from each other in the most essential points, and have left us in doubt with regard to the *distinguishing species* of the disease, *its proximate cause, and its treatment.*

We must confess that extreme great difficulty has always been experienced in the classification of insanity. The original division, so far as we can gather it from Hippocrates, was very simple. Ecphronia appears to have been the generic term for mental alienation; the species were mania and melancholia. Whenever mania was accompanied with febrile excitement, it was then denominated phrenitis; this term was also applied to the delirium occurring in fevers. Melancholia was confined to those disordered affections of the mind, conceived to arise from black bile, and, as applied by Hippocrates, probably meant nothing more than what we now understand by a high degree of hypochondriasis; although its meaning soon came to be very much extended, even amongst the Greek physicians of the succeeding age.

The division of Celsus, which is partly founded on this, is phrenitis, characterized either by continual dementia, or by occasional extravagant ideas, and by cheerfulness or sadness; his next species is marked by subsisting a longer period than the former, by being almost without fever, by sadness, and by having black bile for its original cause. His third division comprehends that species of insanity, which is of the longest duration; and which may co-exist with a robust habit of body. These various species, we conceive, will correspond to mania, melancholia, monomania, or dementia. The next classification we shall

* The term Lethargus, which Willis conceives to have been applied to the low state of melancholia by the ancients, seems rather by Hippocrates, to have been assigned to a disease obscurely described, probably chronic inflammation of the liver, with its subsequent symptoms; while in Celsus, it seems to denote the stupor and torpor which occur in the course of violent fevers, and are the result of some degree of effusion on the brain, or inflammation of its membranes.

notice, is that of Cullen. His generic term is VESANIÆ; the genera are, AMENTIA, MELANCHOLIA, MANIA and ONEIRODYNIA. In treating, however, of the disease, he departs from this arrangement, and adopts one, not only different from, but in some degree at variance with it. Many a young practitioner has found himself at fault, in assigning the cases of disease he met with to their proper nosological genera and species; but here is the great author of nosology himself, when treating of the malady, unable practically to apply his own generic distinctions. So easy is it for an ingenious mind to strike out a classification, which shall seem to rest on the most scientific principles, and yet be found to vary from nature: and so little faith is in general to be put by medical men in a nosological creed.

Pinel, who felt the disadvantages of the want of a just classification, endeavoured to form one on the same philosophical principles, as those on which the divisions of natural history were founded; but notwithstanding the great pains he bestowed on this subject, and the opportunities he enjoyed of extensive observation, he nevertheless has failed materially in his object. His division is—1. Mania, or general delirium (wandering). 2. Melancholia, or delirium confined exclusively to one object. 3. Dementia, or abolition of judgment. 4. Idiotism, or obliteration of the intellectual faculties and feelings. Delirium, or wandering, is here made the characterizing symptom of the genus mania, and yet one of his species is denominated *mania sans delire.* The classification is also liable to other objections, many of the distinctions being neither clear, nor capable of being applied in practice. It has, however, been modified by Esquirol, and as in this form, it is adopted by Dr. Morison, we shall transcribe the classification with the distinguishing characters of each genus, from the work before us; but shall first state Dr. Spurzheim's arrangement of insanity, which seems here to claim our notice.

The opinions of the physiognomists regarding the causes and nature of mental alienation are founded, to a certain extent, on their peculiar views of the faculties of the mind and functions of the brain. From these it follows, that whatever portion of the brain is the seat of diseased action, the manifestations of the corresponding mental faculty are proportionally deranged. If it be the organ of cautiousness, this faculty may acquire a diseased activity, the same with that of pride. On this principle Dr. Spurzheim accounts for the peculiar subjects and passions on which insanity turns in different individuals. He likewise says that organs of the brain, the seats of various propensities, may acquire such unnatural activity and power as to be irresistible to the will, and be-

come the causes of mental aberration, as well as of moral delinquency. The faculties of the mind may have also a diseased state of inactivity. This inactivity may exist in several of the faculties, or in all of them; it may be congenital, or the effect of accidental causes. In the former case he terms it idiotism, in the latter fatuity. The manifestation of the faculties of the mind may also be altered or alienated in their specific appearance, that is, they may be morbid in quality. The organs of sense, the eyes for instance, sometimes see every object red. This he terms the alienation of the faculties; he therefore admits four general forms of insanity, viz. *idiotism*, which is partial or general; *fatuity*, also partial or general; *irresistibility*, if any power be so active that the will has no influence on its actions; and *alienation*, if the manifestations of the faculties are deranged in their quality, and the intellect is incapable of distinguishing the derangement. These four forms designate different states of insanity, while mania and melancholia are considered as merely "sorts of alienations."

We now return to the classification of Esquirol, comprehending Mania, or general insanity; Monomania, or partial insanity; Dementia, or fatuity; and Idiotism.

The symptoms characterizing the first of these are thus given by Dr. Morison in the work before us:—

"The active or confirmed state of mania, or general insanity, is marked by exuberance of ideas, expressed with rapidity, and in the utmost confusion of incoherence. The delirium extends to objects of every description—the attention is continually wandering—the efforts of volition are vague and unsteady—the affections are perverted—the muscular power is often much increased—the excitement is expressed by disorderly motions, cries and threats—the irritability is great—the restlessness incessant, there being little or no sleep, costiveness is generally a symptom, and emaciation takes place.

"There is a peculiar expression of the countenance and eyes. The sensibility is sometimes much increased, sometimes the contrary. The incoherence is often more remarkable in the beginning, for when the corporeal excitement subsides, the ideas, though decidedly insane, become more connected. If kept under strict restraint, the patient has frequently a considerable command over himself. Delusions are rarely dwelt on in mania. Fits of fury, which may be regarded as fresh paroxysms of delirium, frequently occur. These consist in increased excitement and violent rage against certain objects present or absent. Sometimes this suddenly subsides, and is as suddenly renewed. The duration of violent paroxysms, or furious fits, is very various from one or more days to several months. They are generally succeeded by depression of mind and body. The cause of these fits of fury in mania is various. Sometimes the maniac starts out of a short slumber in a fit of

fury. In most maniacs, the irascible emotions being easily excited, they are ready to fly out the moment an impression is made; they take no precautions like the monomaniac, and are totally inattentive to safety and comfort. In partial insanity, one and the same delusive idea is often the exciting cause of a furious fit.

"In some maniacs there is an appearance of gaiety and satisfaction, and in others of extreme despondency. There is more difficulty in ascertaining the state of mind in mania than in monomania. The description of it has been elucidated by the accounts of those who have been insane; for on the restoration of reason, they frequently can relate all that has occurred about them during their disease; and this recollection, it has been observed, is not removed in some until another paroxysm is about to take place. The course of the disease is more rapid than that of monomania."

In most cases of mania, however, the succession of symptoms is generally marked by three periods or stages.—An incipient stage, an active or confirmed stage, and a stage of decline and convalescence, or termination in the incurable state. This division of the symptoms appeared so manifest to Pinel, that in the Salpétrière he separated the patients into three departments, according to the violence or decline of the disease. We shall again refer to Dr. Morison for a description of the incipient stage of the disease:—

"The symptoms occurring in the incipient stage are, neglect of usual occupations, change of temper and affections, restlessness, indecision, absence of mind, love of solitude. The corporeal health also often suffers. Similar symptoms announce a threatened relapse, of which patients are sometimes warned, by experiencing the same feelings and the same intrusive ideas that had preceded the former attack."

The incipient stage may exist a long time after the first observation, before madness is confirmed. The symptoms *immediately* preceding an attack are, unusually early rising, incessant talking, or unusual silence, altered tone of voice, disposition to quarrel, especially with friends and relations, unusual gestures, redness of the eyes, unusual sensations in the head, or other parts of the body.

The reader may compare with this description of symptoms the following case extracted from Pinel, which also illustrates the progress of the successive stages of the disease:—

"A young man of distinguished talents, and possessing a profound knowledge of chemistry, had been for some time meditating a discovery which was to lead to a large fortune; his imagination became excited, and he resolved to remain several days shut up in his laboratory, and he procured stimuli of various kinds to elevate his fancy, to excite him to labour, and to banish sleep. He drank freely of strong liquors, had odorous substances burning around him, and sprinkled his apartment

and laboratory with quantities of Eau de Cologne. It may easily be imagined that the combined action of all these means, together with the heat of the furnace, was calculated to raise his physical and mental powers to the highest degree of excitement; and it need not create surprise, that towards the end of the eighth day he experienced a most violent maniacal attack. His symptoms were :—

Incipient, or first stage.—4th day. His face pale, his eyes fixed, the voice strong, ideas confused; delirium, the object of which is a supposed discovery made in chemistry; *one idea alone, he says, ought to take the place of every other—"I am God, the Father of the Universe."* His countenance becomes inflamed, phrenzy is pourtrayed in his features, his eyes sparkle, he utters torrents of abuse against all who approach him, and threatens to exterminate them. (*He is restrained by the strait waistcoat, and drinks plentifully of acidulated and mucilaginous liquids.*) Alternations of vociferation and imprecations, with comatose faintings;—analogous state during the following days.—12th day. Great agitation during the night, false perceptions, he believes that he sees around him cats, dogs, and wolves—at intervals, experiences a slight tetanic affection—eruption of pimples on the back and sides.—15th day. The pimples are filled with a transparent fluid and break. The day following;—sleep for the first time. From this period, diminution of the convulsive movements arising from the tetanic affection—(*frequent lotions applied to the head, which is shaved and kept bare, vomiting produced by nauseating drinks.*)—24th day. Some lucid moments, but in general a state of wandering, false perceptions—a species of phrenzy, which urges him to break and tear every thing. He speaks alternately of mysteries, of cabals, of the philosopher's stone—traces hieroglyphics on the walls—devouring hunger—drying up of the pimples.

Second Stage.—35th day. He inquires, with eagerness, of one of his companions for news from his parents, and talks of his friends, but soon after incoherence of ideas.—46th day. Gentle walk in the garden, repeated on the following days.—52d day. Persists in remaining seated exposed to the sun's rays, which is injurious; his face reddens, his eyes are either fixed or incessantly moving, his look threatening; spasms of the muscles of his limbs, of the trunk and face—experiences a slight degree of swooning. These symptoms are renewed by exposing his face again to the sun. His dejections are passed more regularly, colour not so dark, slight returns of wandering, but the lucid intervals of longer duration. (*Continuation of warm baths, one every two days.*) Dejections liquid—hunger more moderate—but always an involuntary impulse to break whatever comes in his way.

Convalescence.—73d day. Complete return of reason—expresses a desire of returning to his former habits, when his understanding shall be fully re-established, which sentiment shews his knowledge of his own real situation; spasmodic contractions become more rare.—79th day. Salivation, which becomes every day more abundant, and continues during a fortnight; wishes to see his sweetheart.—80th day. Fatigued by

several visits which had been permitted; on the following days certain incoherent ideas, expressed at intervals; requires some management; expresses strongly his purpose of returning to his former habits, and of marrying; from this time unlimited liberty to walk out.—90th day. He is restored to society, and in six weeks afterwards he is married. He has enjoyed since this period the entire use of his reason, in spite of the excessive heat of the Summer, which followed, the inquietudes inseparable from an unsuitable marriage, and the multiplied occupations of business."

We have given the history of this patient at full length, not only for the reasons previously stated, but because it is the case from which Pinel first drew the idea of the division of mania into different stages; yet we confess, had we met with such a case in our own practice, we should have considered it simply as one of inflammation of the brain, proceeding, uncontrouled by any active measures, to its natural termination; we should have expected, if seen at its commencement, to have diminished its violence, and cut short its progress by moderate depletion, employed during the first days of the attack; and can only attribute the escape of the patient to the occurrence of that unknown process in the constitution which produced the eruption upon the skin.

We shall return again to this subject, but in the mean time shall state the characteristic symptoms of monomania, and dementia; availing ourselves of the accuracy with which they are given by Dr. Morison, and the clear and appropriate language in which they are expressed.

"*Monomania*, or partial insanity, is the most frequent form of the insane state. It is sometimes the sequel of general insanity; the gradation from general to partial insanity is imperceptible. It is not always accompanied with depression: on this account the term Monomania has been proposed by Esquirol. There is sometimes considerable difficulty in detecting partial insanity, until the subject on which the mind is deluded be touched upon.

"Monomania, with depression, the melancholy of authors, has been termed Lypemania.

"The distinction between Mania and Monomania consists in the alienation being general in the former, and in the latter partial, or confined to a few objects.

"In most cases its approach is gradual, the mind for a time retaining energy and strength sufficient to resist the intrusive ideas which at length overwhelm it, and occasion false propositions to be announced and maintained.

"It is greatly modified by the prevailing temperament.

"Indifference and aversion to friends and relatives is very remarkable

in monomania; moral restraint disappears, and propensity to suicide frequently occurs.

"Several species, which are characterized by the predominant ideas and emotions may be distinguished.

"Monomania may pass into Dementia. It may be intermittent, or the different species may alternate with each other, and with mania. Delusions sometimes occur in addition to those which constitute the leading feature of the species."

Dementia or Fatuity.—"In this there is a general failure of the mental faculties, loss of memory, incapability of reasoning, and general incoherence; the desires and aversions are nearly extinct; frequently there is some peculiar action often repeated, called *tic* by the French. The sleep is in general good, as well as the appetite, which is sometimes depraved. The habits are uncleanly. The physiognomy is peculiar, the features relaxed, the eyes dull, and without expression, the regard unsteady, and the whole character vacant, stupid, or as if astonished. The fatuous are sometimes mischievous.

"Dementia is a frequent termination of long continued insanity. It is also occasioned by other diseases or injuries of the brain, as apoplexy, palsy, and epilepsy; by excessive study; abuse of pleasures; onanism; and by too debilitating treatment in recent insanity. It is also the consequence of old age; it is frequently accompanied by palsy and epilepsy.

"With regard to the distinction between dementia, mania, and monomania. In dementia there are few or no ideas, no attention, and no determinate will. Mania and monomania are chiefly marked by errors of perception and by exuberance of ideas, or by the attention being rivetted on a few ideas in the monomanian, while the maniac cannot controul his attention. Dementia is sometimes complicated with these."

We do not pay very implicit obedience to nosological definitions and distinctions, and rid ourselves of them with as little ceremony as Cullen himself would have done had they stood in his way. With regard to those of insanity, we are very sceptical, especially as we find almost every author on the subject declaring how often the one genus is found to pass into the other, so that the maniacal patient will become affected with melancholia and afterwards pass into dementia. A writer in the Edinburgh Review says, with regard to the classification of Pinel, that

"Many of the distinctions seem absurd, and others not well founded. The several kinds of insanity, are not distinct, they are only varieties of the same affection. All the symptoms mentioned under the five heads occur in the same patient. At different times he passes through all the gradations, from furious phrenzy to complete fatuity."

Esquirol also remarks,

"That the different species of mental alienation often resolve them-

selves into each other; thus mania ends in dementia, as does also melancholia, these again are terminated by mania, and even mania with phrenzy is critical of dementia, when it has been produced by a too active treatment in the commencement of mania or monomania. All the species degenerate into dementia, after they have subsided for a longer or shorter period. Insanity, also, resolves itself into hypochondriasis, into hysteria, and even into chorea. I have never seen it, however, resolved by epilepsy. It is only in some cases of insanity, that convulsions resembling epilepsy, occur; but these convulsions, far from being critical, announce an effusion on the brain, which aggravates the disease and presages the approaching death of the patient."

To add still more to the confusion thus occasioned in our view of the nosological distinctions, M. Pinel, Jun. the son of the venerable Pinel, has recently announced his opinion that mania, melancholia, and dementia, are successive stages of the same disease.

For our own part we reject entirely the classifications of insanity, as founded on a false principle, and conceive that the various inflammatory affections and obstructions of the liver might, with equal propriety derive their pathognomonic distinctions from the quality of the bile which is produced, as that the diseased affections of the brain should be classified according to the character of the aberrations of the intellect.

Although it be allowed on all hands that the intellectual principle can never be diseased, and that consequently the disordered affection must be in the brain, yet it may be urged that diseases are distinguished by their symptoms, and that the mental affection is, in cerebral maladies, often the first indication of the disease, and constitutes throughout its most prominent character. We do not admit this; for the physician who knows what he is about, in diseases of the brain looks at the delirium merely as one of the phenomena by which, united with other symptoms, he may judge of the nature and degree of that disordered action at work in the interior of the head. It is this which he steadily contemplates—it is to this, and not the delirium to which he directs his remedies—it is the violence of the disease and not of the symptoms which he strives to overcome. This mode of reasoning may to some appear trifling, as the abatement of the disease must necessarily be followed by abatement of the delirium; and when labouring to remove the one, the physician is also removing the other. Yes—but will he who has the delirium most conspicuous in his mind proceed in the same way as the other? Will he who has the fluctuation of a symptom for his magnet, proceed in the same course with him who eyes steadily the disease? No—the morbid action may be rioting in the brain—disorganization may be taking place in its tissue, yet the delirium may be less marked;

it may abate, although the disease be running its course with unmitigated violence. An erroneous nosological definition of a disease may be corrected in the mind of the experienced, but it maintains its full authority and influence over the inexperienced, for a greater or a less time according to the sagacity of the individual, and his opportunities of information; nay, many are slaves through life to the dogmas acquired by education; while others, every day they live, find themselves unlearning the false views and impressions produced by an illusive nosology. It is long, however, before this correcting principle can affect our knowledge on some particular subjects and certain species of disease, so surrounded are they with the mists of prejudice and error, which involve them in a cloud of impenetrable darkness. Mental alienation is ranked, and is likely to remain, amongst the unfortunate subjects in which reason is turned aside from its usual course of philosophical induction, and error has become respectable by right of tenure. How else could it have been that, while it is acknowledged the intellectual principle cannot be diseased, a class of diseases should have been invented implying the existence of such intellectual malady; the symptoms must be either those of diseased intellectual principle or of diseased body; and if of the latter, as they assuredly are, why ought not their generic distinction to be confined to the body alone? the root of the affection is there, it is in the brain. The disordered mental phenomena are the result of derangement of its functions, and are merely indicative of the existence and shades of cerebral disease. It is therefore on the cerebral affection alone, that every generic distinction of cerebral disease can be philosophically founded, and medicine ought to know no such order or genus as has been for ages founded on the mental phenomena; for surely if we derive the generic character of the malady from the mind, we imply it has its seat in the intellectual principle; just as we should imply the seat of hepatic disease to be in the bile, were we mad enough to class the diseases of the liver according to the colour and quality of the secreted fluid. We would therefore reject entirely the order vesaniæ, and all its genera from medical nosology. We would not acknowledge insanity to be a disease but merely a symptom and would include all its various modifications under the term of cerebral disease. Bold as this may appear, until it be adopted there does not seem any probability of our making much progress in the knowledge of the causes and treatment of mental alienation, for the opinions and practice of men are regulated by their prevailing impression of the seat of the malady; and hence, the course of cerebral disease in maniacs has been regulated and appreciated according to the violence or abatement of

the delirium, with little or no regard to the diseased action going on in the brain, which in many cases might be proceeding silently and rapidly at the time when its exacerbation was by no means indicated by a proportionate degree of mental aberration, or by corresponding violence of the maniacal paroxysms.

There is no malady whatever, not even hysteria, that assumes such a variety of forms, undergoes so many modifications, and is marked by such a diversity of symptoms as cerebral disease; nor can it be otherwise, since it involves the origin and extremities of so many muscular and sentient nervous fasciculi, connected with and influencing every part and every function of the system. If it affect one portion of the brain it is distinguished by a particular set of symptoms; if it shift its situation, the change is indicated by a new class of phenomena; hence the folly of appreciating the violence of so important a disease merely through the medium of one set of symptoms; hence, too, many a maniac has become more composed, his amendment has been proclaimed, and he has soon after died.

There is no doubt but that inflammation, affecting chiefly the anterior lobes of the cerebrum, assumes a very different appearance from that affecting the cerebellum, or even the base of the brain. In the case quoted from Pinel, where the intellectual faculties had been over exerted, it is probable that the portion of the brain subservient to these faculties, wherever it may be situated, and surely no one will place it in the cerebellum, was the seat of inflammatory action; hence the rapidity with which derangement of the intellectual functions manifested itself, and the inordinate violence of the delirium with which the disease was characterized. Had the affection been cut short at its commencement, by measures of even very moderate activity, and we presume it might, for we have seen instances of this—granting that it had been prevented from running its course—what then would the disease have been termed? Not mania, surely, but inflammation of the brain. Inflammation of the brain, therefore, is termed mania when it lasts a certain time; or it degenerates into mania, *i.e.* the inflammation, passing into a chronic state, becomes another disease and ceases to be inflammation! But in the case before us we will not even admit that it had ever become chronic. Any one who reads the account of the symptoms attentively, will perceive in them only the successive stages of acute inflammation; and sees in the tedious recovery, merely the progressive efforts of nature to free the brain from the morbid effects of so violent a disease.

Enough, we think, has been said, to shew on what fallacious principles the common distinctions of mental diseases are founded. We shall now turn our attention to the nature of their

proximate cause, regarding which a variety of opinions also exists. Hippocrates conceived that in insanity the brain was more filled with humours than it ought to be, which were easily put in motion, and hence the disturbance of the sensorial functions; when, however, the brain was at rest, the mental disturbance ceased, and the patient became rational. The exciting causes of the brain were redundancy of phlegm or of bile. Those insane from the former cause were quiet and peaceable, while those excited by bile, were noisy and mischievous.

This specimen of medical reasoning will suffice, until we come down to Cullen, who observes, " physicians, in seeking for the causes of the different states of our intellectual functions, have hardly looked further than into the state of the motion of the blood, or into the condition of the blood itself. It is very probable that the state of our intellectual functions depends chiefly upon the state and condition of what is termed the nervous power." Crichton, in conformity with this opinion, conceives that " the delirium of maniacs, when it has a certain *peculiar* character, always arises from a specific diseased action of those fine vessels that secrete the nervous fluid of the brain." This is also, the opinion of Hill, Willis, and many more in this country, who have thought on the subject; others again, such as Drs. Arnold, Cox, and Mayo, " conceive a determination of blood to the brain or an increased activity of its vessels to be the proximate cause."

On the Continent, the opinions of medical men are equally divided on this subject. MM. Pinel and Esquirol, consider the affection merely as the result of derangement of the sensibility of the brain. In the organic changes discovered in the *post mortem* examinations of the insane, they recognize the effects and not the causes of the malady. On the other hand, M. Bayle, in the valuable work before us, acknowledges only physical alterations of the brain and of its envelopes, as the causes of mental diseases.

Our author, like almost all the other writers on this subject, is attached to an hospital for the insane; being physician to the Maison Royale des alienes de Charenton, and has had opportunities of extensive observation; his deductions are drawn from no less than 1500 cases of mental disease, and 400 *post mortem* examinations. His main conclusion from these is, that diseased affections of the meninges were extremely common amongst the insane, whilst those of the cerebral substance were very seldom met with; and he remarked also, that there was a constant relation between certain kinds of mental alienation, and a certain degree of chronic inflammation of the membranes of the brain.

The connexion between mental alienation and meningitis, had been observed, and pointed out to his professional brethren, by M. Royer Collard, whose premature death cut short the course of observations he was pursuing on this subject. The idea in fact, is one to which the progress of medical opinion has been tending for some time past, and we find examples of it, although not so fully developed, scattered throughout the works of various authors.

In one, for example, which lies before us, written by Mr. Mills, and which the reader will find noticed in another part of this Number, there are numerous cases, dissections, and observations, all tending to the same conclusion. It has, however, by no one been brought forward and illustrated so distinctly and clearly as by M. Bayle.

His work is divided into two parts, the first contains a vast number of well selected cases, exhibiting the disease, namely, chronic inflammation of the meninges of the brain, under a variety of forms and complications. We must, however, remark, ere we proceed further, that by the term chronic, which M. Bayle applies to meningitis, he does not mean that kind of inflammation, which succeeds the acute form; but rather wishes by this term to point out the slow inflammatory action which characterizes the affection both in its commencement and subsequent progress. The last part of the work is occupied with a complete description of chronic meningitis; detailing its causes; its various premonitory and other symptoms, its stages, and lastly its treatment.

In the particular cases which M. Bayle presents to us, in the commencement of the work, we see chronic meningitis in its most common form, and accompanied with its most general symptoms; we find the cerebral membranes injected with blood and thickened, and have also instances of serous effusion on the surface of the brain, between the folds of the membranes, and in the ventricles. These morbid changes of the membranes are accompanied in the individual, by a particular class of symptoms of mental disorder; such as highly elevated notions of grandeur and self importance, or general debility of the intellectual faculties, ending in paralysis. Another class of cases is marked by the prevailing character of effusion; in which the serum is thrown out abundantly between the two layers of the arachnoid coat, also infiltrated into the cellular tissue of the pia-mater, and in the ventricles—these affections are accompanied generally with partial paralysis.

In a third class, a number of cases are presented to us, in which inflammation of the substance of the brain has supervened on inflammation of its membranes, and by which the

general correspondence of the symptoms with the organic changes, is curiously exemplified; for under this class we find that the patients are seized with spasmodic affections, such as fits of epilepsy, and convulsive paroxysms. The formation of an adventitious or false membrane, found between the two layers of the arachnoid, serves to characterize another class of cases; namely, the fourth. The fifth class presents the combination of chronic meningitis, with softening of the brain, and other cerebral affections. In the sixth, we have examples, in which the malady has been cured or the symptoms ameliorated. His seventh, and last class comprehends twenty-two cases of chronic meningitis, extracted from other writers.

In the second part of the volume, in which, as we before mentioned, the causes, the pathology, the symptoms, and the treatment of meningitis are described, we find M. Bayle following the same philosophic principles, by which he is guided in the preceding part. His deductions are made not from single cases, but from a wide field of observation, and are presented to his readers in conjunction with the facts from which they are drawn.

Our author, differing from Pinel and Esquirol, regards sanguineous congestion of the brain, as the proximate cause of meningitis, and of course as also the proximate cause of the larger share of mental diseases. The numerous kinds of organic change produced on the dura mater, the arachnoid and pia-mater, are delineated with great minuteness and accuracy; after which he gives the premonitory symptoms of the disease, and describes the modes, whether gradual or sudden, in which it is usually developed. In the course of the malady, he recognizes three distinct stages; the first is distinguished rather by partial than general insanity, the delirium turning upon some object of vanity or ambition; in the second the insanity becomes more general, the delirium more violent, and the ideas proportionally exalted; in the third, there is a total loss of intelligence, and of memory; this last stage is characterized by different degrees of severity of the symptoms. In the first or lightest degree there exist aberration of mind and loss of memory; the ideas still turning upon grandeur, wealth, and objects of ambition; in the second degree these symptoms are more highly aggravated, while there are concomitant affections of the body, such as great debility, and paralysis more or less general; the third degree is characterized by mental imbecility, and general paralysis.

We must reserve our account of the treatment for a continuation of this article in our next, in which we shall enter more fully into the nature of the proximate cause of insanity, and detail, more at large, the observations and opinions, and various modes of cure contained in the works under review.

Art. II.—*Traité de L'Auscultation Mediate et des Maladies des Poumons et du Cœur.* Par R. T. H. Laennec, &c. Seconde Edition Entièrement Refondue. Paris, 1826.

When we compare the value and amount of what Laennec has effected for medical science, with the claims even of the most successful of his contemporaries, we are compelled to award him the palm of universal pre-eminence. Those who know and can appreciate what he has done, will readily grant him this merited tribute: and those who dissent we challenge to point out any other individual of the present century, whose claims, as a benefactor to the healing art, can be placed in competition with his. But in estimating the character of a medical philosopher, we must regard not merely the positive amount of the truths he has brought to light, but the steps by which he has reached them—not only what he *has* done, but also what he has avoided doing. The road to truth is toilsome and rugged, and that trod by the medical enquirer is peculiarly beset with snares; the seductive charms of theory lurk on every side, and perpetually tend to lure him from his path. Every page of the history of our art, proclaims the inability even of its master spirits to resist the allurements of this baneful enchantress. What, in fact, do the records of medicine exhibit but a ghostly succession of theories, dignified by the title of doctrines; and to what but the pestiferous influence of system, in misdirecting the efforts of intellect, is it owing that the practical department of medicine is so little in advance of what it was two thousand years ago, compared with the strides made in the other branches of physical knowledge? Those only who are fully sensible of the difficulty of resisting the propensity to vicious theorising, and of the injury and degradation long entailed on the art by its habitual indulgence, can duly appreciate the rare value and surpassing excellence of an enquirer like Laennec; who, early disgusted with the vanity of hypothesis in medicine, has rigidly adhered through his whole career to the laborious path of observation, and has taught, by the imperishable result of his labours, how much can be accomplished by the well-directed exercise of the senses, and the persevering examination of diseased nature.

With a conspicuous talent for precise and delicate observation, he combined that philosophic expansion of mind, which enabled him to discern observation's proper course and its true use. His neglect of theory did not, as has been said, result from a mind

incapable of ascending to abstract or systematic principles, but arose from a thorough conviction of its insufficiency as a guide to truth, and from observing how far the dogmatists of his day were bewildered in mazes of their own creation. In addition to the merit of discerning the true basis on which medicine should rest, he is worthy of much higher admiration for the conscientious and undeviating constancy with which he adhered to his principles, through the whole course of his labours. In every step of his extensive researches, we find him the same faithful and unwearied traveller in the humble path of observation, diverted from his course neither by his own imagination nor by the most imposing speculations of others.

The success which has crowned his labours, has induced others to follow his footsteps, and will tend to impress a chaster character on medical inquiry. But let those who emulate his fame, bear in mind the solid principles and laborious steps by which it was established, seeing that his discoveries did not consist of insulated facts accidentally stumbled on in pursuit of some false hypothesis, but were the legitimate result of the steady and indefatigable application of the only true principles by which the knowledge of disease can be successfully cultivated.

The following brief sketch of his medical life will not, it is hoped, be considered out of place. Born at Quimper, in Lower Brittany, in the year 1781, he was instructed in classical, and to a certain extent, in medical learning, under the tuition of his uncle, an eminent physician at Nantes, and sent to Paris to pursue his studies in 1799. The system of Pinel was then dominant in France; a system characterized less by any peculiar physiological doctrine, than by attempting to assimilate medicine to the descriptive sciences that come under the denomination of natural history; and, which seemed less the result of any real improvement of ideas, than of that passion for remodelling every branch of human knowledge, engendered by the French Revolution. It aimed more at the classification than the cure of diseases, and was distinguished by no inconsiderable share of the high sounding jargon that disfigured most of the scientific writings of the same period. At the same epoch there existed in Paris another medical school, less imposing than the other in its pretensions, but founded on a more substantial basis; at its head was Corvisart. Disregarding, as useless, attempts at the methodical arrangement of diseases into classes and genera, his chief object was to connect their symptoms with the pathological changes of the organs in which they are seated. Hence, to a careful observation of symptoms, he

added the diligent study of the concomitant changes of structure discovered by dissection. To this latter school, young Laennec attached himself, where he became the fellow-labourer of Bayle, who was by some years his predecessor. With the enthusiasm characteristic of true talent, he at once became devoted to the study of morbid anatomy; and, as the first fruit of his labours, he published, at the age of twenty-one, and before the completion of his curriculum, an excellent Memoir on chronic peritonitis *, drawn from his own observations, and containing a more complete description of the structural characters, and a more accurate appreciation of the symptoms of that disease than had previously appeared.

In the following year we find him carrying off the two first prizes in medicine and surgery, given by the Institute of France; and in the same year, he appears in the character of an anatomical discoverer, having published in Corvisart's Journal †, the description of a tunic of the liver, which had hitherto eluded the attention of anatomists. This was the proper or cellular coat of the liver, subsequently admitted by anatomists ‡. About the same time he published an account of a process, by which the lining membrane of the ventricles of the brain may be demonstrated by dissection; a membrane, the existence of which was admitted from analogy, but which anatomists had never before been able to separate with the scalpel. His Thesis, published in 1803, was no less remarkable for acuteness of reasoning than for the masterly knowledge it displayed of Greek literature. Its object was to shew that the generic and specific distinctions of fevers, which occupied so much the attention of Pinel and his followers, were not sanctioned, as they pretended, by the writings of Hippocrates. It is somewhat singular, that Laennec, with so highly an original cast of mind, should always have manifested a peculiar predilection for the writings of the ancients.

Continuing to prosecute, with unexampled assiduity, his researches in morbid anatomy, which the hospital arrangements of the French capital enabled him to do on a scale elsewhere unparalleled, he conceived the idea of classifying the materials of that science, if science it could be called, which till then con-

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* Journal de Medicine de Corvisart, Leroux, and Boyer, 1802.

† Op. Cit. 1803.

‡ It is proper to state, that although this discovery was unquestionably original on the part of Laennec, the membrane in question had been described long before by Mr. Grew, in his *Thesis de secretione Bilis*, published at Edinburgh, in 1732. It does not, however, appear to have attracted the attention of our anatomists, as we do not find it noticed in any of their systems, except in the erudite work recently published by Dr. Monro.

sisted in a mass of insulated facts, scattered through the writings of Morgagni, Bonet, Lieutaud, Portal, and others. His views on the classification of morbid structures, he published under the title of "A Memoir on Pathological Anatomy," in the *Bulletin de la Facultè de Medecine,* and which, afterwards, with considerable extension, formed the article, "Pathological Anatomy," in the *Dictionnaire des Sciences Medicales* *. Between Laennec and Dupuytren, who was at this time a fellow-labourer, and pursuing a similar line of research, a warm controversy arose touching the right of priority to certain pathological ideas, advanced in this Memoir, to which both asserted a claim. The result of this dissention was, that each of the young rivals commenced a course of public instructions in Pathological Anatomy; each had his partisans; each attracted numerous hearers; and much interest was excited towards the subject in general. We notice this occurrence, because, although in itself trifling, it may be considered as having had no small share in kindling that ardour for pathological anatomy in France, which has since burst forth with such unexampled lustre.

In the year 1806, he published a Memoir †, on *Melanosis*, a species of morbid structure, which has only very recently attracted the attention of British pathologists. Although some imperfect notices in the writings of Haller, and the older anatomists, apparently refer to this disease, Laennec was the first who traced its history and character as a distinct affection. About the same time he furnished a still more valuable contribution to pathology, by the description of another species of diseased structure, which had previously been confounded with cancer. We allude to the malignant affection, known to British surgeons by the names of *Fungus Hæmatodes, Spongoid Inflammation, Medullary Sarcoma,* &c. Owing to the want of communication between England and the Continent, their descriptions of it were wholly unknown in France at the period when Laennec wrote. His dissertation, therefore, which bears ample testimony of being drawn from original observations, first introduced this morbid formation to the notice of the French pathologists, under the title of *Encephaloide,* a term suggested by its similarity to cerebral substance. This dissertation, which is published in the large Dictionary of Medical Sciences, deserves to be studied, not only for the complete view it contains of the subject; but in respect of perspicuity and masterly style of delineation, is unique as a model of pathological writing.

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* Article Anatomie Pathologique, L. II.

† Bulletin de la Societé de la Faculté de Medicine, No. 18, 1806.

Our limits will not permit us to notice individually a great variety of other contributions to medical science, from the pen of Laennec; he was the author of a considerable number of articles besides those we have quoted, many of them valuable, in the first twenty-three volumes of the large Medical Dictionary, and of a great number of detached papers, chiefly containing original observations, published in the Medical Journals, particularly the Journal of Corvisart, of which he was for several years the principal conductor. These afford proofs of no common industry, and are the more astonishing when we consider them as proceeding from a man, whose labours were perpetually interrupted by bodily illness, and who, in fact, from the habitual infirmity of his constitution, may be said, during the greater part of his career, to have tottered on the brink of the grave.

From the example of his first instructor, Corvisart, Laennec's attention had been early directed towards the diseases of the thoracic organs, and he had laboured not a little both to elucidate their pathology, and add precision to their diagnosis, when, being on one occasion reduced to perplexity in exploring a case of diseased heart, his fertile genius by one happy thought, disclosed an unexplored region of research, which, under the guidance of his ingenuity and industry has extended into one of the most striking improvements imparted to medicine in modern times. The invention of the stethoscope is generally spoken of by French writers as the result of a happy chance; in our opinion, it partakes very little of the fortuitous character. Laennec had long been in the habit of applying the naked ear to the chest as an index in cases of diseased heart. In 1816, a case of this kind occurred to him in the person of a young female, where propriety prohibited the employment of this method. At a loss what to do, he bethought himself of an expedient, suggested by the well known property of solid bodies in conveying sound; he rolled up a quantity of writing paper into a cylinder, and placing one end on the chest, whilst he pressed the ear against the other, he heard, with astonishment and satisfaction, the pulsations of the heart much more distinctly than he had ever done with the naked ear. It soon occurred to him, that his acoustic tube might be employed to examine the other sounds produced by the actions of the organs within the chest, as those of breathing, and the voice. Having also verified this conjecture by experiment, he immediately commenced at the *Hôpital Necker*, a series of experimental researches on the modifications impressed on these sounds by disease, with the view of ascertaining how far his discovery might be rendered available for the purposes of *diagnosis*. In this investigation he was assiduously occupied during three years, embracing

every opportunity of bringing his observations to the test of dissection, and at the same time improving thoracic pathology on which his system was founded. Not choosing to rely solely on his own powers in deciding on the stethoscopical signs, he called in the assistance of many of the most eminent physicians in Paris.

In 1819 appeared the Treatise on Auscultation and Thoracic Pathology; a work, which when we regard the untrodden track it opened up; the value, extent, and originality of the facts which crowd its pages; the thorough fidelity, graphic accuracy, and luminous order with which it pourtrays the characters of disease, even in its most intricate forms; and in fine, the complete light which it has thrown on one of the most extensive departments of disease, previously enveloped in chaos, must be acknowledged to stand without a rival. The labour he had undergone in the composition of this work gave so severe a shock to the health of the author, as to compel him to resign every employment; and he retired, in 1820, to Brittany, his native province, with the intention of never returning to Paris. In the course of two years, however, his country residence had produced so great and unexpected an improvement of health, that he determined on resuming his station in the capital, whither he returned in 1822. Shortly after his arrival he was appointed, at his own request, Professor of Clinical Medicine in the new Faculty which had just been reorganized, having refused the more exalted and lucrative office of Royal Counsellor of Public Instruction, for which the Ministry had destined him. He thus chose the sphere in which his talents could be most usefully exercised; his enthusiasm for his favourite pursuits was as strong and disinterested as ever, and no one who has witnessed the assiduity with which he devoted himself anew to clinical teaching in the wards of La Charité, can doubt that it afforded him genuine pleasure. This, in fact, was the theatre of his glory; it was here that students, as well as veteran professors, attracted by his reputation, crowded to Paris from all quarters of the civilized world, eager to drink at the fountain-head, and to judge for themselves of discoveries that formed the theme of universal discussion.

The first edition of his Treatise on Auscultation having been exhausted, he was engaged for two years past in the preparation of another. With the view of establishing, with still greater certainty, the value of his diagnostic signs, and of correcting any errors into which he might have fallen, he went through a laborious revision of his stethoscopical observations. He also considerably extended the pathological part of the work; he

embraced the general Symptomatology and the Treatment, which were not included in the first edition; and altered the arrangement of his materials—converting the whole into a complete Treatise, pathological and practical, on the Diseases of the Thoracic Viscera.

The increasing illness of the author, which could not deter him from pursuing his task, was but too visible after its conclusion. He again retired into Brittany, to try the effect of his native air, but the fragile tenure, by which life was held in so feeble a frame, had suffered an irreparable shock: he died on the 13th of August, 1826, at the age of forty-five.

In the former series of this Journal, there was given so full an analysis of the first edition of Laennec's Treatise, that we do not now propose to introduce it to our readers as a stranger; and in the successive reviews that have appeared of the publications of Andral, Collins, Louis, Martinet, Forbes, and others, who have followed in the same path, the whole subject has been so amply discussed that we should only waste the reader's time and patience in treating it *de novo*. Presuming, therefore, on his familiarity with what has previously been done, we shall restrict ourselves in this article to a notice of the principal alterations and additions that appear in the new edition. In particular, we shall expose M. Laennec's views of the Treatment of Thoracic Diseases, a new feature of the work, and highly interesting to the practical reader.

One of the most striking alterations in this edition relates to the mode of arrangement, which the advanced state of knowledge has enabled the author to present in a more perfect and scientific form than before. Our readers will recollect, that in the first edition the different species of stethoscopical signs, as those of the breathing, voice, &c., formed the primary basis of arrangement, the *diseases* being classed subordinately; that is to say, each division of the work commenced with an account of a particular order of sounds, which was followed by the history of the disease which it served chiefly to indicate. In the present edition M. Laennec has discussed all the stethoscopical signs or sounds in a separate and preliminary division, which in fact constitutes a complete Treatise on the Principles and Practice of Auscultation; whilst the second part contains a complete history of the diseases of the Lungs, arranged according to the pulmonary structures in which they are respectively seated. The auscultation and diseases of the heart, constituting, in some measure, a distinct subject, occupy the third and last grand division. The superiority of the new arrangement, both in a practical and philosophical point of view, is at once obvious.

In the preliminary Treatise on Auscultation, M. Laennec, before entering on the use of the stethoscope, passes in review several methods, suggested at different times, of exploring the state of the chest by mechanical means, such as, examination of its walls by the touch, by ocular inspection, by mensuration; the Hippocratic succussion, the percussion of Avenbrugger, the abdominal compression of Bichât, and immediate auscultation. The last only of these methods, as presenting any thing new, claims our notice at present. Hippocrates, it would appear, has alluded to this kind of auscultation. In a passage which has not hitherto attracted attention, he states that *hydrothorax* may be distinguished from *empyema*, by applying the ear to the chest of the patient; if the fluid be pus, he says a sound will be heard resembling that of boiling vinegar. Passing over this curious historical fact, as well as the ingenious attempts made by MM. Bayle and Laennec, when pupils of Corvisart, to judge of the state of the heart by direct auricular observation, we may observe that since the publication of Laennec's researches, some physicians have proposed, by way of improvement on his plan, to dispense with the stethoscope altogether, and have recommended in its stead the employment of the naked ear placed directly in contact with the chest. Some of the partisans of this plan, in affecting to consider themselves opponents of Laennec, have assumed airs, not altogether the most becoming. Their proposal evidently implies a recognition of the accuracy of his principles, and is entitled to criticism only as one modification of the various means that may be employed to attain the same end. Greater convenience in its employment, and superior distinctness with which it conveys sounds, form the alleged grounds of preference. These advantages, which this plan does to a certain extent enjoy, may, in particular circumstances, render it a convenient substitute for the stethoscope; a want of reflection alone could sanction the idea of its superseding the latter. As to the greater facility of hearing the sounds when the ear is placed directly against the chest, so far as regards the murmur of respiration, there can be no doubt of the fact; accordingly the results obtained in this way appear much more satisfactory to a beginner; but, as M. Laennec has shrewdly observed, the very circumstance which renders the respiratory sounds more audible in this mode of auscultation, diminishes their accuracy, and consequently their value in a diagnostic point of view. When auscultation is practised by applying the ear directly to the chest, the sound of respiration is collected from a large extent of lung; not only the ear, but the temple, zygoma, and whole side of the face serving as conductors. Although this

circumstance renders the general sound louder, it prevents us from examining the sound; in other words, from discovering the state of *particular portions* of the lung taken separately. Hence, in cases of partial and circumscribed disease in the *parenchyma*, M. Laennec has seen those who trust to this mode of exploration deceived by the general sound of the pulmonic expansion; and pronounce a lung healthy, in which, by the more accurate discrimination of the stethoscope, portions of, perhaps irremediable, disease were clearly denoted. Still in hospitals, where the multitude of patients renders it necessary to abridge the time allotted to each, this method may, from its ease and rapidity, be advantageously employed to examine the different kinds of *râle*, or rattle; and this may be done with more confidence in tracing the progress of the disease, if a primary examination has been made with the cylinder. There are, however, various other signs, such as those obtained from the voice, (pectoriloquism, &c.) which being dependent on the peculiar construction of the instrument, the naked ear is incapable of appreciating. It is equally inadequate to discriminate with accuracy the different changes recognized by the cylinder in the sound of the heart's pulsations, and characteristic of its diseases. So much for immediate auscultation; of which we are inclined, from actual trials, to think somewhat more favourably than M. Laennec; regarding it, however, less as a rival than as an occasional convenient substitute for the more precise but protracted examination with the stethoscope.

Entering on Mediate Auscultation, M. Laennec proceeds to give minute directions for using the stethoscope, and precautions to avoid being misled. He then goes on to discuss successively the different species of sound produced by the corresponding functions of the respiratory apparatus, describing each, first in its healthy or natural state, and then tracing the modifications impressed on it by the various forms of disease. Thus the murmur of respiration, as modified in the air-cells, the bronchiæ, and the larynx; by youth and old age; during waking and sleep; by tubercular excavations; dilatation of the bronchiæ; inflammation or thickening of their lining membrane, or that of the air cells; effusion of mucus or lymph; and, in like manner, the resonances of the voice and cough in all their varieties, healthy and morbid, are traced by the hand of a master, and form a picture minute and elaborate, but simple and perspicuous; replete with the most delicate shading, yet rigidly drawn from nature.

To transfer in whole to our pages these admirable lessons in auscultation is impossible; and to transfer them in part would

be useless: all those who desire to practise the stethoscopical art must render themselves familiar with the pages of Laennec; combining with diligent study frequent exercises on the body. The ear must be first familiarized with the healthy varieties of sound; the changes which these sounds undergo during disease are next to be acquired. Many of these sounds are extremely well marked, and when once heard are ever afterwards known; others are more obscure, and, like the diseases which they indicate, they frequently run into each other by imperceptible gradations. The ear, improving in delicacy from frequent practice, gradually acquires the power of distinguishing the nicer shades of sound to which at first it was insensible*.

The first set of diseases introduced by M. Laennec, as appertaining to the bronchiæ, are arranged under the head of *Catarrh*. Of these he describes, in successive articles, five principal varieties: the acute mucous catarrh; the chronic mucous catarrh; the dry catarrh; the pituitous catarrh, and the convulsive catarrh, or hooping cough. Other varieties of catarrh, termed symptomatic, latent, and suffocative, complete the series. This chapter has been considerably extended, its arrangement methodised, and a good deal of new matter added, particularly in the article on hooping cough. M. Laennec's mode of handling each of these affections is, after some general observations on its nature, to state its pathological characters, or the sensible changes which it effects on the structure where it is seated; he then gives its history and progress, its pathognomonic signs and general symptoms; and lastly the treatment. To the interesting details under these heads we must be contented with this general reference. As the last, however, is peculiar to this edition, we shall shortly state M. Laennec's views of the *treatment of the different kinds of ca-*

* The Faculty in London are not, we believe, generally aware that there has been for some time in their own immediate vicinity, an extensive school for the study and practice of the stethoscope. We allude to the clinical instructions given at the Bishopsgate-street Infirmary for the diseases of the Lungs, by Dr. Thomas Davies, physician to the Institution, in the course of his Hospital duties. We have much pleasure in learning that Dr. Davies, as soon as he has completed a pathological collection, illustrative of the diseases of the heart and lungs, which he has for some time been engaged in forming, intends to deliver a Course of Lectures on the Pathology and Diagnosis of Thoracic Affections. From his superior scientific attainments, added to a long and laborious study of the stethoscope under Laennec, and its constant employment on an extensive scale for the last two years, at the above Infirmary, we consider Dr. Davies eminently qualified for the task he is about to undertake. In the mean time we assure those physicians, who are still sceptics regarding the properties of the stethoscope, and who are open to conviction, that a visit to Dr. Davies' *Clinique* will not be lost. The appeal to the senses is more powerful than the most cogent reasoning.

tarrh. Acute catarrh.—Except where the patient is extremely robust, or where, from the severity of the symptoms, there is reason to apprehend the supervention of *pneumonia*, or finally, where the sputa are tinged with blood, M. Laennec agrees with all judicious practitioners in rejecting the use of the lancet as protracting the duration of the malady, checking, or even suppressing expectoration. Leeches, he says, have the same advantages and the same disadvantages as general bleeding, but in a less degree; he states, however, that, in severe cases, cupping-glasses applied to the chest in considerable number, so as to extract blood slowly, and, above all, left till the tumefaction be pretty permanent, occasion a marked diminution of the oppression and other symptoms. Blisters, in the more active stage he finds to aggravate the symptoms; but after a certain period, when the affection threatens to protract itself in a chronic form, or when there is reason to apprehend that it is engrafted on a latent tubercular affection, he approves of a blister on the arm or thigh, to be kept suppurating. He places considerable confidence in the efficacy of emetics in the commencement of the disease. He thinks them remarkably efficacious in children, who support their action better than adults. They are the best means for preventing the rheums of infants from assuming the spasmodic character of hooping cough. Doses merely nauseating, he has found rarely to produce any marked effect. Of the popular mode of curing catarrhs by hot spirituous draughts taken at bed-time, M. Laennec speaks favourably. He is in the habit of employing it regularly except when contra-indicated by particular circumstances, as inflammation of the *primæ viæ;* a temperament too irritable for the use of alcohol; or, when the catarrhal affection being unusually severe, there might be reason to apprehend that alcohol would induce *pneumonia.* With these very obvious precautions, M. Laennec has never found any bad consequences result from this plan; when adopted at the commencement of the disease, it generally carries it off in one night; after the expectoration has become thick, it is much less effectual. As to the use of mucilaginous and saccharine preparations, so universally diffused among the vulgar, M. Laennec regards them as wholly inert, serving only to amuse the patient whilst nature operates the cure. In allusion to this practice he quotes the proverb—"a cold properly taken care of lasts forty days, and a neglected one six weeks." In the treatment of the *chronic mucous catarrh*, we are happy to find that M. Laennec places a just value on the host of inert vegetable infusions, which, thank God, have for some time been fairly discarded from practice in this country,

but still continue to encumber the prescriptions even of the more enlightened French physicians. These virtually constitute nothing more than the expectant plan of treatment, injudiciously applied in the present instance, to a disease which, so far from tending naturally to resolution, generally increases in proportion to its duration and the advance of age. In the aged and debilitated, when the disorder has become habitual, M. Laennec justly distrusts the powers of medicine in overcoming it, but expresses his conviction that in numerous cases where, through inert treatment, it is allowed to become habitual, it may by the timely employment of more active remedies be wholly eradicated. Of these remedies he has found none so effectual as emetics, repeated according to the strength of the patient, and his capability of supporting them. By this means alone, he has cured catarrhs of long standing, even in persons far advanced in life: more frequently, however, in the middle-aged and the young. He cites the case of an old lady of eighty-five, of a spare habit of body, but whose health was good, with the exception of a mucous catarrh of eighteen months duration, accompanied by an expectoration of two pounds daily. She took fifteen vomits in the space of a month, was completely cured, and lived to the age of ninety-three. M. Laennec recommends the vomits to be followed by bitters and tonics, particularly by the preparations of iron and of quinine. Alcoholic stimulants, taken warm at bed time, constitute another mode of treatment which he has found frequently successful, but it requires to be continued for a much longer time than in the acute catarrh. He speaks favourably of the effects of balsamic substances, such as the tolu, copaiba, or turpentine, &c. taken in quantities, varying from one to two scruples daily. The habitual use of tar-water for drink, or the inhalation of the vapour of boiling tar has sometimes sufficed to carry off chronic catarrh. When, as frequently happens, an acute attack is superadded to the chronic affection, the employment of blisters, cupping-glasses, either dry or for blood, may be rendered necessary; but in the habitual state of the disease, M. Laennec has never been able to perceive that either blisters or issues were of the slightest service. A common effect of such acute attacks is to diminish or wholly to suppress the expectoration. This event is usually followed by more or less swelling of the lining bronchial membrane, and a proportionate degree of dyspnœa. When slight, the dyspnœa may be combated by the oxymel of squills, the kermes mineral, or ipecacuanha, in small doses; when more severe, an emetic is preferable. When under ordinary circumstances there is urgent dyspnœa, he employs narcotics, and pre-

fers the recent powder of belladonna, in doses of from grss. to grj.

Pituitous catarrh, or phlemorrhage, is characterized by the expectoration, generally in very large quantity, of a colourless, transparent, filamentous liquid, resembling in appearance the white of egg diffused through water, and frothy on the surface. This species of expectoration occurs as a feature of several diseases. It is generally observed in the commencement of acute catarrh, but in small quantity; it sometimes re-appears when resolution is taking place; it sometimes accompanies the more consistent sputa of chronic catarrh, particularly during exacerbations. It also makes its appearance during the resolution of pneumonia; finally, it may be symptomatic of œdema of the lung: in all these cases it is of transitory duration, lasting only for a limited number of hours, days, or weeks. But besides these transient states, it occurs in two very chronic forms; in the first it is symptomatic of that peculiar form of phthisis in which an immense number of small tubercles are developed at the same time throughout the lung, and remain for a long time in the first or crude stage. This is the species of phthisis termed by Bayle miliary. The second chronic form of the pituitous catarrh occurs as an idiopathic disease. It is almost exclusively confined to old age, and particularly affects those of a lymphatic temperament, or whose constitution has been broken down either by excesses or sedentary mode of living. Although this species of catarrh may continue long without affecting life, it will be readily conceived that it proves most refractory to treatment. Nearly the same remedies are indicated as directed for chronic mucous catarrh, particularly a succession of emetics. M. Laennec has found blisters on the thorax, as well as the extremities, of more service than in the mucous catarrh, as well as small doses of opium frequently repeated.

Dry Catarrh.—This species of catarrh which depends on a peculiar inflammation or irritation of the bronchial membrane, and is characterized by hard cough, either wholly without, or with very scanty sputa, M. Laennec has found to resist the means which prove effectual against the other species of catarrh, and to require peculiar treatment. That which M. Laennec has found most effectual, consists in the administration of alkaline substances, particularly the almond soap, taken in the form of pills, in doses of a half to a whole drachm daily; the carbonates of soda, potash, or ammonia, in doses of twelve to thirty-six grains, dissolved in the patient's ordinary drink; the use of saline and sulphurous mineral waters; baths of sea-water, heated to about 30° R. or artificial alkaline baths. M. Laennec observes that

this treatment is analogous to that pursued by the humoral physicians, on the principle of diminishing the viscosity of the fluids, and he seems to think it possible that the alkaline remedies may operate by diminishing the viscosity, and consequently facilitating the expectoration of the bronchial secretion; but without stickling for any *ratio medendi*, he assures us of the fact that, in numerous instances, by this mode of treatment, he has overcome dry catarrhs which proved rebellious to every other plan. The use of these remedies, even when they produce prompt alleviation of the symptoms, in order to attain a permanent cure, often requires to be persevered in for months.

In the treatment of *hooping cough*, M. Laennec places his principal reliance, especially in the commencement of the disease, on emetics frequently repeated; and subsequently, with the view of diminishing the violence of the fits, on small doses of narcotics, particularly the extract and the recent powder of the belladonna, in doses of one-eighth to half a grain, morning and night. When the paroxysms assume the periodic character, they must be combated by the sulphate of quinine, administered in the same way as for intermittent fever, and M. Laennec observes their efficacy is frequently as well marked as in the latter disease.

The second chapter treats of *Dilatation of the Bronchial Tubes*, a pathological affection intimately connected with chronic catarrh, and first described by Laennec. It is considerably enlarged, and contains some new cases. The third chapter, which treats of *croup*, or, as M. Laennec terms it, plastic inflammation of the mucous membrane of the respiratory passages, appears for the first time in this edition. It exhibits a succinct account of the disease, but contains nothing with which the English reader is not already familiar.

The fourth chapter gives a short account of *bronchial hæmorrhage*, by which M. Laennec means that form of hæmoptysis which depends on simple exhalation of blood (*suintement*,) from the bronchial mucous membrane. The materials of this chapter are partly new, partly transposed from the former articles on hæmoptysis and pulmonary apoplexy.

The fifth chapter contains a few observations on *bronchial polypus*. Genuine polypus of the bronchial membrane, analogous in structure to the vesicular polypus of the nostril, is an extremely rare affection; M. Laennec has never seen it, and knows only of three examples on record. He describes, however, a species of concretion, of which he has seen one example, and which an inexperienced observer might mistake for polypus. This was a solid substance, about an inch and a half in length, from four to

five lines in diameter, situated in the left bronchus, and so nearly filling it as to leave only half a line in diameter between its circumference and the walls of the tube. It adhered to the margin of the partition of the two bronchi. It was similar in tissue to the polypoid concretions of the heart and arteries, but firmer, drier, evidently organized, and distinctly traversed by minute vessels. The subject of this disease was phthisical, and had been attacked with hæmoptysis. M. Laennec was led from its appearance to ascribe its formation to the retention and gradual organization of a coagulum of blood; and, in confirmation of this idea, he alludes to the fact exemplified in various instances, where the fibrine of extravasated blood becomes organized, and unites with contiguous living surfaces. An intelligent Reviewer in a contemporary Journal, says, "that M. Laennec confounds polypous excrescences, a fleshy production from the membrane, with a very different affection, the albuminous and tubular concretion which is occasionally formed by mucous surfaces." The most careless observer could scarcely commit so palpable a blunder. It is almost needless to say that the charge is wholly unfounded; so far from being ignorant of the tubular concretion alluded to, or confounding it with polypus, to which it has not a shadow of similitude, M. Laennec has distinctly mentioned it (quoting also a case), in the chapter on croup, and ascribed it to its real cause, a chronic inflammation of the bronchial lining *. In the sixth chapter, M. Laennec gives a short account of *ulcers of the bronchial membrane*, an affection which is extremely rare, but which is sometimes found in phthisical patients who have ulceration of the membrane of the larynx. The materials of this chapter are chiefly drawn from the labours of Cayol and Andral. A few observations on ossification of the cartilaginous rings of the bronchiæ, on the passage of foreign substances into their cavities, and on morbid alterations of the bronchial glands, conclude this part of the volume.

The third section treats of those pulmonary diseases which are seated in the proper tissue or parenchymatous structure of the lungs. They are treated in the following order: hypertrophy of the lung; atrophy of the lung; emphysema; œdema; pulmonary apoplexy, and peripneumonia; the latter of which occupies a space equal to that of all the others combined. M. Laennec introduces this section with a few preliminary observations on the minute structure of the parenchyma, and on some sources of errors necessary to be guarded against when examining a lung supposed to be diseased. After noticing the opinions of

* See p. 244. Vol. 1. "J'ai vu moi-même. &c.

Malpighi, Helvetius, Haller, and others, he adopts as most probable that of Reississen, who, after an extensive series of microscopical observations, and injections of the lung with mercury, arrived at the conclusion that the bronchiæ at their extremities are subdivided into numerous minute canals, which terminate in globular *culs-de-sac*, the assemblage of which, presents an aspect similar to that of the extremities of the peduncles of a cauliflower. M. Laennec next adverts in strong terms to the inadequacy of microscopical observations to throw any useful light on the nature of morbid structures, and points out the danger of trusting to conclusions deduced from this species of evidence. He places no reliance on any thing beyond those well marked changes of structure which are conspicuous to the naked eye, and which are evidently incompatible with the healthy functions of the affected organ. Were we to abandon this principle, pathological not less than healthy anatomy, would quickly lose its station among the physical sciences, and become a vast field of hypothesis, founded on optical illusions and idle speculations. Another species of error is, attributing to disease, appearances which are merely the result of natural changes. Thus the black pulmonary matter which is deposited in lines along the *septa* of the air cells, giving to the surface of the lung its variegated or streaked aspect, and which, when carried by the absorbents into the bronchial glands gives them the colour of ink, has been confounded with the affection termed *melanosis*. Concerning the nature of the black pulmonary matter very little is known, but it does not appear to be the result of disease, being invariably found in greater or less quantity in the lungs of adults. The infiltration or engorgement, whether of blood or serum which takes place in the lung, either after death or during the last struggles of life, forms another source of error which Laennec discusses at some length.

By *hypertrophy of the lung*, which forms the subject of the first chapter, M. Laennec understands that increase of size which one lung undergoes when, in consequence of compression from any cause, the opposite lung has been for some time unfitted for performing its function. Morgagni had observed that in cases of *empyema* the healthy lung was augmented in size, causing the *mediastinum* to project into the opposite cavity of the chest. M. Laennec assures us, that this augmentation of volume is much more common than is generally supposed. The increase of dimension is not the result of mere passive dilatation, but is accompanied by an increase of firmness and elasticity, and frequently when the chest is laid open, the lung instead of collapsing, as in the natural state, protrudes as if it had been im-

prisoned in too small a cavity. By *atrophy*, M. Laennec designates a state directly opposed to hypertrophy; a state in which, from continued compression, the bulk of the lung becomes diminished by interstitial absorption. M. Laennec assures us, that when a lung has long suffered from compression, this state becomes permanent; for although the compressing cause be removed, and the circulation of air be re-established, the lung never recovers its original dimensions.

The chapter on *emphysema* of the lung, we find, has been considerably enlarged in this edition. By the above term, as our readers know, M. Laennec has designated a dilated state of the air vesicles. This name, it must be confessed, is not the most appropriate, because the pathological state which it is here employed to denote is essentially different from that represented by the term emphysema, in other parts of the body. The lungs are, besides, subject to a genuine emphysema, consisting not in a dilatation of their air cells, but in an inflation with air of their cellular membrane. M. Laennec has in this edition added a short account of this latter affection, which he describes under the name of *interlobular* emphysema. It is uniformly the result of rupture of some part of the respiratory vessels, produced either by external injury, or violent efforts in coughing.

The chapters on *edema* of the lung, and *pulmonary apoplexy*, present no alteration worthy of remark.—To the latter M. Laennec has added some account of the treatment of hæmoptysis, which is one of its most frequent concomitants. He approves of free and prompt bleeding at the commencement of the disease, and afterwards places his principal reliance on brisk purgatives, which he has found of great efficacy even in severe cases. In a few desperate cases he has employed the tartar emetic, on the Italian system; it occasioned no bad effects; on the contrary, it seemed to moderate the hæmorrhage; still it did not manifest that decided influence over this disease which it is found to possess in pneumonia.

The sixth and last chapter of this section, contains a most elaborate and complete dissertation on *peripneumonia*, or inflammation of the parenchymatous structure of the lung. He considers first the anatomical characters of acute pneumonia in its three successive stages, simple serous engorgement *(engouement)*, hepatization, and purulent infiltration; tracing, with graphic accuracy, the intermediate shades by which they run into one another; he then treats of partial pneumonia, and pulmonary abscess; noticing, in passing, the objections of Crichton and Himly, to the fact announced in the former edition, and

since amply confirmed, that the true pulmonary abscess, is an extremely rare affection. He then describes the pathological characters of the lung observed during resolution, and estimates the comparative durationof the different stages of pneumonic inflammation. In some cases, he has found the first stage, or that of simple serous engorgement, protract itself to the seventh or eighth day, extending over the whole of one lung and part of the other, and ending in death before hepatization had formed, at least to any extent. On the other hand, he has found the inflammation pass through its first stages into that of purulent infiltration, in the space of thirty-six, and even twenty-four hours. This happens particularly in aged or broken up constitutions, or when the pneumonia supervenes during the course of some other severe disease. But, exclusively of such deviations, he states the average duration of the different stages as follows: That of simple engorgement generally lasts from twelve hours to three days, before passing into complete hepatization. Hepatization generally lasts from one to three days before incipient points of infiltration are perceptible; and finally, the period of suppuration from the commencement of infiltration to the extreme degree of purulent disorganization, varies from two days to six.

Passing over the very complete description of the stethoscopical signs and general symptoms, of all the varieties of inflammation of the lung, as well as the very elaborate chapter on gangrene of the lung, we come to the *treatment of pneumonia*. As the recent plan of treating pneumonia, by saturating the system with tartar emetic, has excited considerable interest, and from the high authority by which it comes recommended, well merits the attention of the practical reader, we shall state pretty fully the mode in which M. Laennec employs this remedy, and the results he has obtained from it. The enormous doses in which this medicine has been given with impunity, chiefly by the Italian physicians, as reported by the different Journals during the last few years, have excited on this side of the channel much astonishment and perplexity; and by not a few have been denounced as Continental fictions. In fact, so irreconcileable did such reports appear with our established ideas of this medicine, that nothing could be more natural than to suspect some fallacy. That the statements in question are perfectly *bona fide*, is beyond doubt; and the identity of the English and French salts, which has been doubted, seems perfectly established by chemical examination, and the coincidence in the modes of preparing them, as directed in the respective national Pharmacopœias. The truth then is, that the emetic as well as purgative effect of tartrate of antimony, when

carried beyond a certain dose, is diminished instead of being increased; a fact which we can the more readily admit as a similar peculiarity has been recently proved to obtain in the administration of calomel.

Our readers are aware that for the introduction of tartar emetic, exhibited on the large scale, as a remedy against inflammation, modern medicine is indebted to Professor Rasori of Milan, and also, that this practice forms one of the leading features of the new medical doctrine at present dominant in Italy. M. Laennec, however, although he has borrowed the practical suggestion, is no partizan of the Italian theory. He further informs us, that when he first made trial of the practice, he had no precise information as to the details of Rasori's treatment, and that his (Laennec's) mode of exhibiting this salt, which is somewhat different from Rasori's, is that which his own trials have taught him to be most beneficial. Having ascertained the existence of peripneumony in any case, he usually commences the treatment by taking from eight to sixteen ounces of blood from the arm. In several instances he has obtained rapid cures without any preliminary bleeding; but he in general premises venesection, except in cachectic or extremely exhausted states of the system. Besides its direct curative influence, he considers it useful in checking for the moment the inflammatory orgasm, and thereby facilitating the action of the tartar emetic. This bleeding is not in general repeated, but immediately after it the first dose of the antimony is given, viz. one grain. As it is important that the vehicle employed should be such as not to dispose to nausea, M. Laennec dissolves each dose of the salt in two ounces and a half of some weak aromatic infusion, as that of orange flowers, sweetened with half an ounce of the syrup of oranges. This draught is given cold; and one grain of the salt is repeated in the same vehicle every two hours, until the patient has taken six. At this time, if the symptoms be not extremely urgent, the medicine is discontinued, and the patient left undisturbed for some hours. But if the disease is already in an advanced stage, if there is great oppression, if the sensorium is affected, if both lungs are attacked, or the totality of one lung, the tartar emetic is continued as above without interruption, until there be a decided amelioration in the symptoms, and indications of improvement in the stethoscopical signs. Sometimes, when a combination of unfavourable circumstances proves the danger to be imminent, he increases each dose to griss, grij, or even griiss, but always in the same quantity of the vehicle.

In a considerable number of the patients to whom the tartar emetic is thus administered, it produces neither vomiting nor

purging. The greater number, however, are vomited twice or thrice, and go to stool five or six times during the first day; but when the exhibition of the medicine is continued beyond the first day, it occasions only the most trifling evacuations; and very often none whatever. On the contrary, the bowels are often so torpid as to require purgative injections. In general, after the second day the medicine occasions neither vomiting nor stools. When the stomach and intestines remain thus tranquil under the influence of the tartar emetic, the system is said, in the language of the Italian physicians, to be in a state of *tolerance (la tolerantia)*. In a few cases, however, it acts more severely, and continues to keep up vomiting and purging. This effect, however, is extremely rare, and may, in general, M. Laennec assures us, be obviated by proper management. In such cases, he finds the addition to the draught of about a tenth part of the syrup of poppies to be generally effectual in reconciling the stomach to the medicine. The effects of the treatment just described, M. Laennec represents as truly striking. At the end of twenty-four, or forty-eight hours, at farthest, often even in two or three, we obtain a notable amelioration of all the symptoms. Sometimes, where every symptom announced certain death, the patient, after the lapse of a few hours, has been placed out of danger, without having experienced any crisis, any evacuation, or in short any sensible change, except a progressive and rapid amelioration of symptoms, confirmed by the simultaneous appearance of the stethoscopical signs that indicate resolution. He adds, that effects equally marked may be obtained in any stage of the disease, even though the greater part of a lung has advanced to the stage of purulent infiltration. In general, the effect of the tartar emetic is never more rapid or more commanding than when it occasions no sensible evacuation whatever. Sometimes, however, the amendment is accompanied with general sweating; and as to vomiting and purging, although they are neither necessary nor desirable adjuncts, they would appear at least not to impede the curative process, M. Laennec having found recovery remarkably rapid when both these evacuations were abundant. He states, as one advantage of the treatment by tartar emetic, that the convalescence is steady and progressive; the patient is not constantly tottering on the brink of relapse, as when treated by repeated bleedings; the recovery of strength is also more rapid, than when the system has been exhausted by extensive depletion.

To demonstrate the success which attends the new treatment, M. Laennec states some general results. In the year 1824, he treated on this plan, in the clinical wards of *La Charité, twenty-*

four cases of pure pneumonia, or complicated at most with slight pleuritic affection. All these were cured except one cachectic subject of seventy, already in a state of senile fatuity, and who took little of the remedy, because he bore it ill. In the year 1825, he treated in the same wards, *thirty-four* pneumonic patients, of whom *five* died. From this number, however, he subtracts the cases of two women, one fifty-nine and the other sixty-nine years of age, both of whom were brought into the hospital moribund, and died in a few hours after admission. The third fatal case was that of a young man, carried off by a disease of the heart, when convalescent from the pneumonic affection. The fourth, whose history, as well as that of the preceding case, is detailed at full length, died from chronic pleurisy during the resolution of a subacute pneumonia. Of these cases, M. Laennec conceives that the two first should not be included in the calculation, because there was no opportunity of giving the medicine a trial; the two last, who died of other diseases whilst the pneumonia was in a state of resolution, are rather proofs of the efficacy of the medicine against pneumonia than otherwise. The remaining case was that of an old man of seventy, who died on the tenth day of an attack of pneumonia with cerebral congestion; so that M. Laennec calculates, in fine, that, of a total of *fifty-seven* cases, only *two* septuagenarians were carried off by pneumonia; a fraction less than *one* in *twenty-eight*. M. Laennec also states the results obtained from the tartar emetic treatment by his cousin, Dr. Ambrose Laennec, Physician to the Hotel Dieu of Nantes, who has treated during the last two years, *forty* cases of pleuro-pneumonia. Of these he lost six, but he excludes three who died during the period of convalescence, in consequence of irregularities (*ecartes de regime*), which gives one death in *thirteen*.

The third section treats of the different morbid structures, *(productions accidentelles)* that occur in the substance of the lung. Of these, six different species are discussed in as many successive chapters.—1st, Tubercles; 2d, Cysts properly so called; 3d, Cysts containing vesicular worms; 4th, Fibrous, cartilaginous, osseous, osteo-petrous, and cretaceous masses; 5th, Melanosis; and 6th, the Encephaloid or medullary cancer. The 1st chapter, on tubercles, which is by far the most extensive, forms a complete history of phthisis. The pathological part is nearly as before, with the exception of some severe criticisms on the doctrines of Broussais, who maintains, in opposition to Laennec, that inflammation is the proximate cause of tubercular depositions. In descanting on the treatment of phthisis, Laennec enumerates the melancholy host of means at different times

vaunted as remedial. He concludes, that except in that rare form of the disease, where a spontaneous cicatrization of the tubercular excavations takes place, phthisis is uniformily fatal. On the other five chapters we shall not attempt to enter. To this section M. Laennec has appended two additional chapters, on affections of the pulmonary blood-vessels and nerves. Under the first of these heads we observe nothing requiring notice; under the second, we find first an account of a neuralgic affection of the lung, analogous to the *tic douloureux* in other parts of the body. M. Laennec observes, that he has seen even physicians of eminence mistake the neuralgic pain for that of pleurisy, and exhaust the system by unnecessary bleedings. He has found mercurial frictions the most successful remedy. In the eighth chapter, M. Laennec discusses, at considerable length, the subject of *Asthma*, a term which he applies to every species of chronic dyspnœa, not depending on organic disease or mechanical causes. He notices two principal species of it: the first he terms asthma with puerile respiration; the second is the spasmodic asthma of nosologists. By asthma with puerile respiration, M. Laennec denotes a state of habitual and continued breathlessness, in which the pulmonary expansion is heard to take place with the same rapidity and promptitude as in infants. As the air-cells dilate readily and to their full extent, proving that there is no obstruction to the entrance of the air, M. Laennec conceives this state must depend on the necessity for an increased supply of air, engendered probably by some cause connected with nervous derangement. In the chapter on Spasmodic Asthma, our author first discusses the question whether such an affection really exists independently of organic lesion or morbid secretion. The recent discoveries of pathologists have proved so many of the asthmatic affections, formerly considered as nervous, to depend on structural changes of the lungs and heart, that there has of late been a very general disposition to deny *in toto*, the existence of a purely nervous asthma. M. Laennec, however, maintains its independent existence, although he considers its occurrence extremely rare. His explanation of its pathology, rests on Reississen's discovery of muscular fibres in the larger bronchial tubes, a fact confirmed by his own observations; and he infers from analogy their prolongation into the minuter ramifications, and even into the air-vesicles. He adduces several physiological facts to prove that the lung possesses an inherent power of expansion, as well as contraction; and consequently, of spasmodic constriction.

The fourth section comprises Affections of the *Pleura*. They are treated very fully in the following order:—*Pleuritis* in its

varieties—Hydrothorax, or Dropsy of the Pleura—Effusion of Blood into its cavity—Pneumo-thorax, or Effusion of Gaseous Fluid—and the formation of new structures (*productions accidentelles*) in the membrane.

The length to which this article has been unavoidably extended, compels us to defer the analysis of this Section, as well as of the separate division of the work, which treats of diseases of the Heart, to a future Number.

ART. III.—*Principles of Dental Surgery, exhibiting a New Method of Treating the Diseases of the Teeth and Gums; especially calculated to promote their Health and Beauty; accompanied by a General View of the present state of Dental Surgery, with occasional references to the more prevalent abuses of the Art; in Two Parts.* By LEONARD KOECKER, Surgeon-Dentist, Doctor in Medicine and Surgery; Member of the Medical and Linnæan Societies; and of the Academy of Natural Sciences of Philadelphia, &c. &c. &c. London: pp. XIX. 445.

This work is divided into two parts, the first of which consists of general observations on the present state, and on the principles of the dentist's art; on the diseases of the teeth and the parts connected with them; on the causes, general and local, of such diseases, and on the modes in which these causes produce their morbid effects on the teeth themselves, and on the gums, the sockets, and other parts more immediately connected with the teeth, and on the constitutional health. In the seventh, eighth, and ninth chapters are explained the general principles adopted by the author for the cure of the diseases of the teeth and parts connected with them; and the treatment proper for preventing such diseases, more especially during the second dentition.

Our author justly observes, that the treatment of the diseases of the teeth has been too long left by the medical profession in the hands of men for the most part unacquainted with the principles of physiology and pathology, and whose ingenuity has consequently been too much limited to the mere consideration of the mechanical means requisite for the local treatment of diseased teeth, or for supplying the defects of such as have been lost. This statement, accords, we believe, with the observation

of the medical profession in general, by many of whom, especially in the metropolis, it would unwisely be deemed almost a degradation to be supposed to know any thing about the diseases of the teeth. Even in the country, or in the public service, where practitioners are under the necessity of bestowing some attention on the subject, their skill is almost limited to a knowledge of the mode of extracting teeth for the relief of tooth-ache, or of scarifying the gums of children. When teeth have decayed so far as to have lost their crowns, few practitioners think it expedient to attempt their extraction.

Whatever professed dentists may think of Mr. Koecker's work, and of the freedom with which he exposes the mischief which he unequivocally imputes to the majority of their principles and operations, we are quite persuaded that it must prove essentially useful to the medical profession, and to the public in general. To the medical philosopher it must be gratifying to see some of the most grievous of the diseases incident to humanity, traced to the influence of causes which have heretofore scarcely obtained notice, and still more to observe, that the removal of these causes will often prove an effectual remedy for evils which had previously defied the medical art.

We have no intention to compliment Mr. Koecker when we state our firm belief that he has clearly shewn that the influence of diseased or dead teeth remaining in their sockets, upon the sound teeth, the gums, the nervous system and the constitution in general, is infinitely greater than the major part of the medical profession are aware of.

It is not our design to enter minutely into the subject of the present work; we would rather wish to point out what appear to be peculiarities, and to recommend to the profession generally, to bestow careful attention on the consideration of the subject, as being one which deserves better than to be left as heretofore to the mere operative dentist.

Among the most destructive of the causes of diseases of the mouth, Mr. Koecker ranks "the destroying of the nerves of the teeth; the replacing a tooth in its socket after extraction; and the transplanting of teeth from the mouth of one person to that of another, &c." With respect to the last of these practices, we believe its dangers to be too well known to render any further reprobation of it necessary in the present day; but with regard to the replacement of extracted or dislocated teeth, as they have been denominated, we would consider it as a benefit conferred on the profession, if our author, or any other gentleman of extensive experience, would bring forward a conclusive body of facts demonstrative of the effects, whether good or evil, of this

practice, and we regret that Mr. Koecker should have contented himself with giving his opinion strongly against it, unsupported by facts, because we have been informed of several instances where it has at least seemed harmless. We think, further, that the profession would be under an obligation to any gentleman who should adduce facts to demonstrate the nature of the connexion that subsists between teeth that have been dislocated or extracted, and replaced in their sockets, and the degree of vitality or sensibility enjoyed by such teeth. We should like to know, for instance, whether the vascular connexion between the periosteum of the fangs, and that of the socket is adequate to sustain the circulation of the osseous substance of a tooth, after its nerve, cord, and central blood-vessels have been torn asunder; or whether the osseous substance becomes positively dead from the moment the laceration of the nerve and blood-vessels is effected; and, in that case, whether the apparent fastening of the tooth in the socket, is not dependent upon the re-union of the periosteum of the fang with that of the socket, while the tooth remains actually void of life and sensibility, so as to cease to act as an organ of touch, in the same manner as healthy living teeth do. We find nothing in the present work which can be considered as conclusively settling these interesting physiological questions, although their importance, we presume, will not be doubted. Mr. Koecker, indeed, expresses his opinion unequivocally, that a tooth of which the nerve or lining membrane is destroyed, not only ceases to live, but becomes an extraneous and noxious body, liable merely to putrefaction or chemical changes, and exciting in the surrounding living parts, actions corresponding in nature to those which are caused by dead parts in other textures of the body. We do not pretend to set up any opinion of our own in contradiction to that of Mr. Koecker, but we should like much to know whether he is quite correct, and should be thankful to any one who should favour us with demonstrative proof, either for or against it, nor should we feel in the least dissatisfied by the opinion of any other dentist of eminence being opposed as an authority to that of Mr. Koecker.

In the second part of the work, our author treats methodically of the causes, local and constitutional, of diseases of the teeth, and of the means of relieving them; but it is not our purpose to follow him particularly through the various subdivisions of this part of the subject. We think it sufficient to notice the leading principles of practice which he inculcates. Conceiving that dead teeth and roots, while they remain in the sockets, act powerfully as exciting causes of disease in the sound teeth, he

insists upon the propriety of removing all dead teeth and roots, before undertaking any operation for the extirpation of caries in individual teeth, or for adapting artificial teeth. For the same reason he reprobates the practice, which other dentists frequently pursue, of plugging dead teeth with gold, with the design of retaining them in their situation. Carious teeth, though not altogether dead, when so far decayed as to render it impossible to eradicate completely the morbid parts, he likewise insists upon the propriety of extracting; and the great impropriety of attempting to save them by plugging or filing. Even sound teeth, when deprived of their antagonists in the other jaw, and therefore no longer fit to be used in masticating the food, Mr. Koecker considers as injurious to the sound and useful teeth, and therefore he recommends their extraction also. Whatever may be the number of dead or decayed roots and teeth, or of useless teeth, which, though free from disease, it may be proper to remove, Mr. Koecker makes it a rule, which admits of very few exceptions, to extract them all at one sitting. He accordingly details cases in which not less than twenty-two teeth and roots were removed at once, with very decided advantage to the patients, who were thereby relieved from indigestion, rheumatism of the head and face, approaching closely in resemblance to tic douloureux, and other painful affections, which Mr. Koecker regards as dependent upon the irritation kept up in the dental branches of the fifth pair of nerves, upon the fœtid exhalations proceeding from the putrefying teeth, and habitually mingling with the air inspired into the lungs, and upon the morbid, mucous, and puriform secretions, secreted by the diseased or ulcerated gums and lining membranes of the teeth, being habitually swallowed with the saliva. For several cases of this description, we must refer to Mr. Koecker's work; but we think it due to him to state here one case which has fallen under our own observation, since the publication of his work, and which confirms the doctrine he maintains.

"A female servant, about twenty-five years of age, had, for a considerable number of years, suffered frequent paroxysms of toothache, accompanied generally with swelled face, and sometimes with rheumatism of the head and neck. The large and small molares, both of the upper and lower jaw, had become diseased and perished, so that in September last, the crowns of the whole of the molares, with the exception of the two bicuspides of the left side of the lower jaw, which were sound, and the second large molares of the right side of the upper jaw, which was carious, were found to have crumbled away to a level

with the gums*. All the dead roots, sixteen in number, were removed by Mr. Koecker with the lever, and then the only remaining large grinder, though not so far injured by caries but that it might have been preserved by plugging, was extracted with the forceps, being without any antagonist, and therefore useless. The operation was finished in less than half an hour. The patient's fortitude was, of course, put to a severe test, but she has had reason to be amply satisfied with the result. A certain degree of pain and heat was felt in the jaws for several hours after the operation, the bleeding continued, more or less, for about twenty-four hours; but by that time her feelings had become so comfortable, that she began to congratulate herself on having got rid of the cause of the sufferings she had endured for years. She has never had any of her old complaints since, and has now become fat and plump, with a fine rosy complexion. Her front teeth are in a perfectly healthy state, and the gums, where the diseased teeth were formerly situated, are free from all tenderness, and considerably hardened in texture."

It is true that many patients will be found, to whom this treatment might be beneficial, but who may not possess firmness enough to submit to it. Indeed, we know one lady who applied to Mr. Koecker, to plug two or three teeth, one of which was not only carious but dead, and besides which, there were several dead and putrefying roots in her mouth, keeping up inflammation in the gums and an offensive fœtor of the breath. This lady wished Mr. Koecker to plug the teeth she pointed out, leaving the others untouched. To this mode of proceeding Mr. Koecker decidedly objected, as an unwarrantable deviation from those principles of practice which experience has taught him to be most beneficial to his patients, as well as most creditable to his own reputation. Finding him inflexible, the lady went to another dentist, who made no objection to plugging the teeth she pointed out, and pocketing his fee; although it is manifest, that if the dead roots are allowed to continue acting as so many causes of irritation in her mouth, not only the teeth which have been plugged, but all her teeth, sound as well as diseased, must soon inevitably perish. We do not mention this circumstance as a reflexion upon the character of the respectable dentist alluded to, whose undertaking the performance of the operation may, perhaps, be justified, without supposing his opinion as to the best mode of treating such cases to differ essentially from that of Mr. Koecker, by saying that when prevented by the fears of a patient from doing what is most for his advantage, it

* The gums themselves were greatly swollen and inflamed, and in several parts ulcerated, and the breath was intolerably offensive.

is our duty to do what is next best. To this Mr. Koecker would reply, that the dentist's operations, when performed under such circumstances, are only an additional and aggravating cause of the evils already existing, calculated to accelerate rather than to retard the final destruction of the whole of the patient's teeth. Mr. Koecker's declining to operate, however, under the circumstances, (and we have known other similar cases in which he has acted in the same disinterested manner,) must at least be considered as an honourable proof of his integrity, and of the sincerity with which he entertains the opinions he has taken upon himself the responsibility of publishing.

It is during the period of the second dentition that the assistance of an intelligent dentist may be made most certainly available to ensure a set of sound and regular teeth, and to avoid those causes which most certainly lay the foundation of disease and decay in the sound set of teeth, because the seeds of future disease are sown during the period of the formation and growth of the teeth, often long before they have made their appearance above the gums. In some children the second set of teeth grow up so rapidly as to cause very considerable local and constitutional irritation, by pushing forth in situations where there is not sufficient room for them, and long before their predecessors of the first set have become loose or detached. The consequence of this premature progress of the second teeth are, frequent paroxysms of pain, irregularity in the position, and disease in the structure of the teeth, with much morbid sensibility of the nervous system in general; indigestion, defective nutrition, and stinted growth of the body. The greatest skill of the experienced dentist is required in such cases, to determine the proper period when any of the first teeth should be extracted; and when cases of this kind have been neglected or improperly treated at first, the diseased condition and irregular position of the second teeth, which are the result, often render it no easy question to decide which ought to be sacrificed, and which retained with the greatest advantage to the patient.

In treating of this part of his subject, our author states it as the result of his observation, that the first large grinders of the lower and upper jaws are more liable to early decay than the bicuspides, or the second large grinders. Whether this observation belongs originally to our author or not, we cannot take upon us to determine, but it is one of very great importance, and upon which he founds a rule of practice of still greater importance, namely, that in young subjects, where, from the natural conformation of the jaws, and the appearance of the front teeth, the canine teeth, and the bicuspides, there is reason to

apprehend considerable permanent irregularity of position, if not actual disease, in the structure of these teeth, both these evils may almost with certainty be avoided, by extracting the first large grinders of both jaws almost as soon as they have passed through the gums. Mr. Koecker states, that by this practice not only is there ample room obtained for the full and regular development of the incisors, the cuspidati and bicuspids, but that the second large grinders tend so much to grow forwards, and the second bicuspids so much backwards, that the spaces whence the first large molares have been removed, are soon greatly narrowed, so that no inconvenience whatever is felt from the want of them. Where this practice is not followed, and where the health of the individual is not destroyed by the irritation occasioned by their growing in such a manner as to crowd upon one another, it happens, in the majority of persons, that the wisdom teeth are liable to disease and to crumble away very soon after they have appeared above the gums. In cases, however, where the four first large molares are removed at an early period, as recommended by Mr. Koecker, he states it, as the result of his experience, that, while the regularity, health, and beauty of the front teeth are preserved, the wisdom teeth, instead of decaying and crumbling away soon after passing through the gums, grow to nearly double the usual size, and become as useful and durable as any other teeth in the mouth.

If Mr. Koecker's observation relative to the frequency of early decay of the first large molares be consistent with general experience, and, if the practical precept which he founds upon it be originally his own, we have no hesitation in declaring that it fully entitles him to the respect of every liberal member of the profession, and to the patronage of the public. It is a decided improvement in the treatment of the teeth, upon which may often hinge the general health and future happiness of the patient. As our author does not say that he has borrowed the idea, it is to be presumed, unless the contrary can be shewn, that it originated with himself. As far as our own observation goes, it tends to confirm Mr. Koecker's position, that the first large grinders are peculiarly liable to early decay. With respect to the practice founded on this observation, our experience is as yet very limited, but certainly confirmatory of the expediency of that practice. A gentleman, who had the first large grinder of the upper jaw extracted at the age of twenty-one, found at the age of thirty-six, that the only sound wisdom tooth in his mouth was that of the same side of that jaw. All the other three, from having been cramped by deficiency of space for their full development had become carious, while all the

rest of his teeth, with the exception of the two upper second bicuspids, which had decayed and crumbled away in early life, were quite sound.

A lady, twelve years of age, whose family are remarkable for large teeth, had scarcely been free from toothache from the commencement of the second dentition. Her nervous system had become so excited and susceptible, that upon the slightest exposure to cold or damp, she was sure to be laid up with swelled face, sore throat or catarrh. The two middle incisors of the upper jaw were very large, squeezed close together, and projected forward so as to be always partly visible between the lips, in consequence of the lateral incisors growing partially behind them. The cuspidati and bicuspids, both above and below, were very irregular in position, and most of them more or less carious. The first large grinder of the right side of the lower jaw had been extracted, for the relief of toothache, at the age of eleven, and the corresponding tooth on the left side of the lower jaw had crumbled away, so that it was now nearly on a level with the gum, communicating an abominable fœtor to the breath. The two first large grinders of the upper jaw were likewise considerably corroded by caries. The two bicuspids of both sides of the upper jaw and of the left side of the lower, were affected with caries, some of them in two places. The lateral incisors of the upper jaw were too far decayed to be capable of having the carious parts extirpated, compatibly with the preservation of the life of the teeth. The middle incisors of the upper jaw, besides being projected forwards, as above-mentioned, were affected with caries, both on the sides next to the lateral incisors, and on the sides in which they were in contact with one another. This patient, belonging to a family of affluence had not wanted for the advice and assistance of a dentist of reputation and eminence, by whom several of her first set of teeth had, from time to time, been extracted, while the numerous inflammatory and nervous attacks to which she had been habitually liable, had greatly reduced her strength and flesh, and rendered the attendance of a physician frequently indispensable. In the state above described, a dentist of eminence in the metropolis being consulted, declared candidly, that in the nervous and debilitated state of the patient, no operation for the preservation of her teeth could be undertaken with any prospect of success, and that by the time she should have attained the age of twenty she would probably not have a whole tooth left in her mouth.

A few weeks after this opinion was delivered, Mr. Koecker, was consulted. He stated, without hesitation, that he considered

the diseased state of the mouth as the immediate exciting cause of the patient's general indisposition, and the deficiency of space in which the teeth had to grow, as having been the chief exciting cause of the disease affecting the textures of so many of them. This explanation of the case seemed to receive confirmation from the fact that the gums, and all the teeth belonging to the right half of the lower jaw, were perfectly free from disease or tenderness, and that the incisors, cuspidati, and bicuspids of that side, were nearly free from irregularity of position, while all the corresponding teeth of the other side of the lower jaw, and of both sides of the upper, were irregularly placed, and most of them affected with caries, affording a striking illustration of the expediency of the practice recommended by Mr. Koecker, of extracting, in cases of this description, the first large grinders, since it was from the right side of the lower jaw that the first large molares had been removed, twelve months before this examination, and this was the only part of the mouth in which the position of the teeth had attained any degree of regularity, and that they were individually preserved free from disease in their structure.

Hence it seems probable, that had the first large grinder of the left side of the lower jaw, been extracted at the same time with its fellow, the health and regularity of the other teeth would have been equally preserved.

The patient being placed under Mr. Koecker's care, the two upper lateral incisors were first extracted, then the two upper first large molares, with the forceps, and lastly the left lower first large grinder, which being too far decayed on the outer side to afford a secure hold for the forceps, was removed with the key instrument. This girl, whose nervous system had become so morbidly susceptible, that she was thrown into the most violent agitation on entering the room, submitted to all of these operations in the space of half an hour. Ever since that day, she has ceased to require any medical treatment whatever, and has constantly improved both in health and strength. The tartar has since been removed, the caries extirpated from the diseased teeth, and the cavities plugged with gold, but the two upper central incisors are in such close contact, that before the caries on their adjacent sides can be extirpated, it is intended to separate them to a small distance by the aid of ligatures round them, and their corresponding canine teeth. Already they are less prominent than formerly; the spaces left by the extracted large grinders are gradually growing narrower; the front teeth are visibly obtaining greater regularity; the gums are perfectly healthy, and the breath exempt from fœtor.

We have chosen to give this detail of these cases as affording,

our readers the means of forming a judgment of the practice of our author, much better than any mere expression of our opinion of his merits could do. Having brought forward these facts in illustration of his success, we are bound in fairness, to state a case in which he failed to accomplish the object he contemplated. A gentleman, who had lost his wisdom teeth, began to feel tooth-ache in the second large molaris of the right side of the lower jaw. It was not till after several examinations that the tooth was discovered to be affected with caries on the posterior surface, and close down to the gum. It is stated in Mr. Koecker's work, that he has succeeded in extirpating caries and plugging with gold the wisdom teeth on their posterior surface. He attempted to do this in the present case, but after filing away an angle of the tooth, he found it impracticable to extirpate the caries without exposing the nerve in the canal of the fang, at the neck of the tooth; and, as the tenderness of the tooth was of course increased by this attempt, Mr. Koecker, was induced to propose its immediate extraction, which was agreed to; in performing this operation, the tooth was broken just below the carious part, and the fangs of course were left in the sockets.

With respect to this case we have to state, that we know of no instance in which caries situated so low down as the posterior surface of a second large molaris, has been successfully treated by any dentist; and with respect to the fracture of the teeth, we apprehend that this is an incident which even the most expert dentists are not able invariably to avoid in every case.

We think well of Mr. Koecker's explanation of the process, whereby, in consequence of the deposition and accumulation of tartar at the edges of the gums, their absorption and ulceration, as well as that of the alveolar processes, is carried to such an extent, that the teeth, although apparently sound, become loose, and are seen gradually to rise higher and higher out of their sockets, till at length they are either drawn out with the slightest touch of the fingers, or fall out spontaneously, though quite free from disease. This is what occurs in persons who are usually supposed to lose their teeth from old age. We know several individuals in whom this destructive process has been speedily put a stop to, and the gums, from being ulcerated, spongy, and liable to frequent bleedings, restored to a perfectly healthy state by the mode of treatment described as suitable for this purpose, by Mr. Koecker.

With these remarks, we beg leave once more to recommend the work to the medical profession, as one well deserving of their attention; and from the perusal of which, intelligent practitioners

cannot fail to derive hints that may be highly beneficial in general practice.

Since the above has gone to press, we have been favoured with the following strictures on the work before us, in which there are many observations on the physiology of the teeth which could only be expected from one who has made this branch of Surgery his particular study; and which we think are entitled to publication, both on account of their value, and the respectability of the source from which they emanate. Notwithstanding the difference of opinion expressed by the writer of these observations, from that which we hold with regard to the general merits of the volume under review, we think it but fair to give to Mr. Koecker's professional brethren, an opportunity of replying to the accusations he has so freely levelled against them.

Additional Strictures on Mr. Koecker's Work.

The quantity of useful matter in this large volume, bears no proportion to its bulk. Mr. Koecker might, in fact, have condensed all that is either new or important in his 445 pages, within the limits of the smallest pamphlet. I might make the present critique a very amusing one, if I chose to expose the author's conceit, egotism, and bad English—but as, in spite of his absurd vanity, he now and then deviates into a sensible hint, a shrewd observation, or even a glimmering (for like all pretenders, he is mysterious and oracular) of a new notion on the subject of the teeth, or dental instruments, I prefer presenting merely a plain statement of the contents of the book.

I have acknowledged that Mr. Koecker's work possesses *some* merit; but I must also say, that whatever is valuable in it is combined with such an alloy of ignorance—ignorance not only of the present practice of dental surgery, but also of the very first principles of anatomy; that it can only be of *any* use *whatever* to dentists who have learnt from experience to distinguish between Mr. Koecker's gratuitous assertions and the actual operations of nature. To general readers (though Mr. Koecker professes his book to be intended for their use) we do not hesitate to say, that this work is not only useless but dangerous. *They* cannot be expected to decide between *fact* and *fiction*, and Mr. Koecker deals largely in the one, if not in the other.

Having made a general charge of *ignorance* against Mr. Koecker, I am bound to prove it by some examples.

Mr. Koecker states, at page 38, "that at the age of six and seven, the mouth of the child, which has not lost any teeth contains twenty, the whole temporary set, and twenty-eight of the permanent." It is notorious to every one who has ever looked into a human mouth, that the "permanent" set consists not of *twenty-eight* but *thirty-two* teeth; and that even the jaw *of the fœtus contains the whole of these.* If Mr. Koecker wants any confirmation of this, let him look into M. Serres' excellent Treatise, "Anatomie et Physiologie des Dents." That accurate observer says, "*A trois mois* j'ai constaté la présence non-seulement des germes de la premiere, mais même ceux de la seconde dentition jusqu'a la dent dite de sagesse." Indeed, the general remarks on the natural history of the human teeth—one of the most beautiful, interesting, and curious processes of nature—are full of errors; and even where by chance the author is right, the confusion of his arrangement renders him nearly unintelligible, Mr. Koecker adds, "from the rudiments of the temporary teeth, those of the permanent are formed;" and again, "at an early period they are firmly and strongly attached." This is evidently nonsense. How can the *rudiments* of any thing not yet *brought to maturity* itself, produce another organized and distinct substance? The fact is, that they are distinct formations, of which Mr. Koecker may satisfy himself by the slightest examination of the parts *in situ.* But if I was to quote all the errors of this kind which I find in his work, I should lengthen this notice into a volume. I shall, therefore, content myself with culling the *summa papavera*—the grossest blunders it contains.

Mr. Koecker states, at page 38, that the "enamel forms a perfectly insensible covering." I should like to know if that be the case, how any indication of touch can be communicated to the teeth. He also gives us the interesting and novel information that "the teeth have a cavity," but "*of a more diminutive size* than the *teeth themselves!*" This, it must be confessed, is admirably reasoned. The "purpose of this cavity," he informs us, "is to contain the lining membrane." Every surgeon but Mr. Koecker knows that the cavity in question contains, properly speaking, the organized remains of the original pulp, by which, and upon which, the ossification of the tooth has been formed; and which gradually diminishing with the increasing age of the individual, is found to be almost completely obliterated in old age.

Mr. Koecker asserts, at page 15, that "if the poor and ignorant classes of the community, so frequently preserve their teeth much longer than their wealthy and more refined neighbours, it is a fact that the former are generally only subject to the abuses of one part of the art, viz. the extraction of their most painful

teeth, whilst the latter are also subject to the mal-practices of dental surgery, *in its most extensive pretensions.*" No one can fail to remark the elegance and intelligibility of the concluding phrase—but I come to the fact. Had the author seen, as I have had opportunities of seeing, the multitude belonging to the lower orders, throng the Parisian hospitals, for the purpose of obtaining the aid of the dentist, and had remarked the melancholy condition of their mouths in general, the state of irritability, and general derangement to which they are reduced before applying for assistance, he would never have made such an assertion. Indeed, the dictum is so contrary to truth, that even the author himself, in another place, contradicts his own position. In speaking of the severest malady to which the mouth is subject, at page 273, he says :—

" The lower classes are particularly subject to this affection; and not even those country people, who enjoy uninterrupted good health, and the influence of the most salubrious atmosphere, and who have originally the most beautiful and healthy teeth, are altogether free from its attacks. In these persons, although possessing robust health when young, *in consequence of an entire disregard of cleanliness*, and a greater predisposition to the production of tartar, *from various general causes*, at a late period of life, a great quantity of tartar is accumulated, and the teeth, though entirely free from caries, are frequently lost, one after another, by this destructive malady of their gums, and contiguous parts."

At page 48, he concludes his 4th chapter, by informing us, that he will give us his " rational views," of such diseases as have been hitherto misrepresented, or altogether considered as incurable, viz. of caries of the teeth, and the absorption of the gums, and alveolar processes. This is something new. What ! caries *misrepresented*, or *considered* as *incurable*. I should have liked to have witnessed the indignation of our old friend Waite, had he still been alive, at such an ungrounded assertion : an assertion, which I may literally and truly say is completely contradicted by every mouth in the kingdom, which he ever operated upon from the Prince down to the peasant.

At page 65, he asserts, that " caries may be considered an affection of a contagious nature." This I most unequivocally deny ; it is quite evident that all caries arises from an inflammation of the tooth, originating in some mal-organization of the original bony deposition, except where it is produced by some external injury, occasioned by the vicious contact of the teeth. Sometimes, certainly, it developes itself in consequence of constitutional derangement, but never from contagion. Under the head of *tartar*, Mr. Koecker asserts, that " tartar is one of

the most frequent causes of diseases *in* the teeth. It acts directly *chemically (sic in orig.)*, in the destruction of them, it being one of the most powerful causes of diseases of the gums," &c. The fact, which has been proved beyond a doubt, is, that tartar is a substance secreted by small glands, which are situated in the gums, and are the same which serve to lubricate the cartilaginous substance of the infant's gums. After the teeth are grown, the glands in question are employed in secreting the matter called tartar. Tartar is never the original cause of disease, but the increased accumulation of it, from an unhealthy or neglected state of the mouth, is the consequence of local or constitutional disorder. There is no doubt that from the mechanical irritation which it exercises on the soft parts when allowed to gather, and the offensive effect on the breath, it is very desirable to clear the teeth of it, and to prevent its accumulation; but it is certain, that so far from "its (tartar) acting chemically in the destruction of the teeth," the latter when completely encrusted with it, seem to be preserved thereby from decay; and when afterwards they are freed from it, are found to be in a complete state of preservation, and uniformly of the most beautiful pearly whiteness.

At page 140, in talking of artificial teeth, Mr. Koecker says—

"But as to their chemical effects, these artificial parts exert a far greater morbid influence upon the system in general, as well as upon the living teeth, and upon the parts with which they are brought in contact, than any other artificial parts used in surgery."

I am not aware of any chemical action exerted by any artificial parts used in surgery; nor is it possible that any chemical action which can at all come under the appellation of *morbific*, can take place in consequence of the action of the juices of the mouth upon gold or platinum, the only two metals ever used in the art.

At page 178, in alluding to such cases as require a long course of those medicines which are regarded as very destructive to the teeth, Mr. Koecker says, "the dentist, by a judicious management, might prevent all bad consequences, even although the use of mercury, or other medicines of the like nature, should be the treatment adopted." Dentists are, in general, too modest to engage to prevent "all bad consequences," in cases of this kind; but if Mr. Koecker has really any specific of the kind he insinuates, if he has found some *quid rectius*—I think him extremely culpable in withholding his discovery from the profession of the present day.

Mr. Koecker seems to hold brushes and tooth powder in high estimation. He says, that "he has been frequently obliged to furnish a different sort of powder and brushes, with different di-

rections to each individual of several families, of which he was the attending dentist." This savours strongly of charlatanism. The most that can be required or expected from this "*remedy*," with which name Mr. Koecker is pleased to dignify it, is the assistance which it affords to the mechanical friction of the brush, accompanied with a slight degree of stimulus to the gums. Mr. Koecker's nice adaptation of his "*remedy*" is ridiculous and unnecessary.

At page 191, Mr. Koecker strangely says, "the first molares are generally most predisposed to disease; they are *least important* as it regards both appearance and utility." I must again refer to M. Serres, instead of pronouncing our negative to Mr. Koecker's assertion, unsupported by any weightier authority than my own.—"J'observerai, comme je l'ai déjà dit, que tous les grands efforts portent sur les grosses molaires, et notamment sur la première. Or, cette dent est la plus large, la plus epaisse, celle dont les racines sont les plus fortes." (Serres, p. 92.) It is in fact *the most important tooth of all*, yet we are directed by Mr. Koecker in cases of irregularity to sacrifice this tooth in preference to a small grinder; asserting, that "all the anterior teeth will grow more or less backwards." It is, on the contrary, well known, that the natural tendency of the teeth is *forward;* and therefore it would be of little avail in the cure of any irregularity of the incisors and cuspidati, to extract teeth at such a distance from them. He, however, encourages his young patients to a quiet submission to this unnecessary sacrifice, in these words:—

"The truth of this principle has been so satisfactorily proved to me by repeated experience, that I have become quite confident on the subject; and when attending to the cases of young people, between the ages of thirteen and seventeen, I have often promised them that I would prepare so good a reception for their wisdom teeth, as *almost* to indemnify them for the loss of their molares, which I considered it necessary to extract." (See page 233.)

Mr. Koecker, at page 225, says, "Although the enamel of the teeth, from its not being organized, is not subject to the immediate influence of inflammation," &c. The present article being merely critical, I cannot enter so fully as I should wish into this subject; but I must remark, that the proofs adduced are by no means conclusive of Mr. Koecker's position. My own opinion is decidedly the reverse of his; for it is quite impossible to account for many of the natural phenomena which I might cite if I had room, without allowing the organization of the enamel.

At page 229, Mr. Koecker gives a list of the local causes of

caries, and says that they consist of "diseases of the gums; the alveoli, periosteum, and maxillary bone, as also dead roots, and teeth; tartar; injudiciously performed operations; bad artificial teeth," &c. To expose this absurd hypothesis would draw this critique out to an unaccountable length. It is, perhaps, sufficient to say that all persons acquainted with the subject properly consider many of these not as *causes* of caries, but as *consequences* of it.

Mr. Koecker's total ignorance of the practice of London is quite manifest from page 307:—

"The instruments generally used are, the punch, the pelican, and the key, and some pairs of forceps. These instruments are not well adapted for general use in the extraction of teeth. The general effect of their use might be denominated, the breaking out rather than the extraction of teeth."

And again, page 312:—

"The forceps in common use at present are generally so ill contrived as to be usually applied in cases of no difficulty, and yet the operation is liable even in such instances to some of the accidents just mentioned."

We may also cite his account of the consequences of that degraded state in his own words, page 312:—

"The frequent failure of success in performing the operation of extracting of teeth; the many difficulties which have so often opposed its complete success, and the many unpleasant and painful consequences occasionally attendant on its incomplete performance, are the causes of an improper omission, and of the prejudices existing against it."

How very cunningly and inconsistently with truth he gives the above list of the apparatus of his brethren, in thus circumscribing it to "punch," "pelican," "key," and "a few pairs of forceps." The truth, however, is, that the *punch* is quite superseded by the lever; the *pelican* is only now known to a few, as a kind of curiosity! the *key*, improved, at least in the way in which I use it, acts both as key and forceps. As to *forceps*, I can decidedly speak in regard to my own practice, and that of those I am acquainted with, that they form the principal instruments of extraction, and are now made on the best mechanical principles, and adapted individually for every situation and state of the teeth. Whether Mr. Koecker has bestowed the necessary attention on the manipulation of these I have no means of judging, as in every thing practical, or that might prove useful, he has studied a most profound silence. He leaves us, however, in no doubt as to his having carried improvements in that department to a most miraculous extent; and informs us, that he

has now possessed himself of instruments of extraction, to the most enormous amount of 80
Instruments for stopping 170
And if we assume the same number for scaling, and other operations 170
we shall have the very wonderful number of *four hundred and twenty* instruments! and the author even adds, that "he has always a great many at hand ready to be adapted to peculiar cases. The profession might probably have been able to glean something from this magazine of curiosities, if he had favoured us with the least glimmering of light on the principles upon which any one of them was constructed; but he acknowledges that he is lost in the vastness of the undertaking, and prevented by the humane reflexion, expressed at page 345, that his "apparatus, in consequence of its extent, and on account of its great difference from what is generally used, would not only be dangerous in the hands of the ignorant, but its application would require some previous practical instruction, even on the part of the scientific dentist."

I could quote a hundred more instances, besides what I have already extracted, of loose and erroneous reasoning from ill defined premises; but as it is much more agreeable to praise than to censure at all times, I am happy to say that I have discovered even in the volume of such a writer as Mr. Koecker, some judicious remarks, and new observations. For instance, at page 234, he says, and in this I perfectly agree with him—

"The only remedy of caries is, first, the entire removal of all general and local exciting causes, and afterwards the removal of the proximate causes by the complete extirpation of the mortified or inflamed parts of the bony structure of such teeth, by surgical operations properly adapted to the several stages of the disease."

I must apologize for quoting also the following passage in Mr. Koecker's *own words*, which are quite sufficient from the clumsiness of the style, and the inaccuracy of the expression to conceal the value of the remark (p. 245.)

"The individual supposing the teeth to be secondarily affected only, under a constant apprehension of disturbing them too soon, puts off this attention till the tender state of his mouth shall have been cured by the removal of the mistaken cause. In consequence of this removal not being effected, the disease, together with the tenderness of the affected teeth constantly increasing, much tartar is deposited, and a diseased state of the gums is produced, by which the breath is rendered very offensive; effects, productive of no little inconvenience, and excitements of the diseased action in the part affected, as well as of the general system."

"This morbid state of the mouth, which would be most distressing,

were it to seize upon the patient suddenly, is from its supposed insignificant origin and slow progress, sometimes supported by habit, and even left altogether unobserved: and often while the individual considers himself in a state of tolerable general and local health, he is under the influence of many disgusting diseases which are not only destroying the teeth, but impairing the constitution, and which, in combination with any other unexpected general disease, are likely to become the means of a premature death."

The following observations from its importance to the public, cannot be too often reiterated (p. 251.)

"Every tooth labouring under complicated caries in its first or second stage, may be made the subject of the preservative treatment, provided there is sufficient reason for attempting its preservation, and six out of seven teeth may be preserved and made useful for many years, and not unfrequently during the remainder of life, by the judicious application of remedies, and subsequently by stopping the cavity with gold."

I have great pleasure too in extracting the following passage, which, in my opinion, is grounded on sound observation. In speaking of the morbid irritation consequent upon dead teeth and roots, Mr. Koecker, (at p. 255.) says:—

"It will always be found that whenever there was a dead root or portion of tooth left in the mouth during the life of the subject, the gums and periosteum had been more or less diseased and under the influence of inflammation and suppuration, but in many instances it is very difficult to distinguish the morbid state of these parts from that of health, as the apparent difference is very slight and not always evident even to the experienced observer."

I am disposed to overlook the very confused and almost unintelligible way in which the "Observations on the diseases, and treatment of the teeth," are introduced in the beginning of Chap. VII., because I see the reasonableness of doing things in proper order. But I presume that there is no one professing this branch of the healing art who does not attend to rules so evident in the management of a mouth committed to his care, and I really cannot agree with our author in one of his concluding paragraphs, in which he says, (p. 135.) "The existing prejudices against the treatment here recommended are entirely founded on the *mal-practices of ignorant and daring men*, or on the timidity of unskilful operators, and hence the prevalent notion that it is better to suffer from a slight disease than from a painful and hazardous dental treatment." "I have, however, in no instance been deterred from performing any operation, of which the necessity was sufficiently indicated, by the circumstance of pregnancy." There is no doubt that a great deal of

very unfounded prejudice exists regarding the danger of operations on the mouth during pregnancy; but this fact cannot be doubted, that there is often great danger in doing any thing to excite the nervous irritability of a delicate female in that situation, and therefore the propriety of giving temporary relief, is often very properly indicated.

These remarks, some may think, will scarcely be deemed valuable enough to atone for Mr. Koecker's blunders quoted above, but if severer critics argue in this way, what will they think of his ignorant and presumptuous abuse of such men as Monro, Hunter, Fox, and Blake? men who have really dignified the science and art, which such writers as Mr. Koecker only degrade and make ridiculous by their want of observation and consequent errors.

I trust that the reader will excuse me for having intruded so much on his time and patience, but I desire much to see that part of the healing art which Mr. Koecker professes, raised in the estimation of the public. Many of the works which have appeared lately in our language are good, and their pretensions moderate; I am not therefore particularly called upon to examine these; but when I find a great master, who has come all the way from Philadelphia, standing forth to enlighten the darkness of our bewildered age, I am under the necessity of looking rather narrowly into his pretensions. He succintly gives his idea of the general practice of his fellow labourers, at p. 14.

"In fact I do not hesitate in the least to assert it as my sincere opinion, that dental surgery, in the manner in which it is practised at present, is really a positive evil, and that the benefits derived from it, capable as it is of being made highly useful, and of contributing importantly to the preservation and restoration of health and life, are not by any means an adequate compensation for the miseries which are inflicted upon the human race by its many imperfections and abuses."

And again, in speaking of the teeth of children (p. 200.) he says:—

"At no age of the subject can successful treatment be more gratifying to the *feelings of the humane surgeon.* It is moreover at this time that an injudicious treatment is especially dangerous and destructive, and the unhappy patient is much to be pitied should he fall into the *rude and murderous* hands of those who are equally a disgrace to the profession, the name of which only they can abuse, and to the judgment of individuals who are induced to place confidence in their false pretensions."

If Mr. Koecker has done little to improve the art, he has at least displayed a liberality of information as to the degraded state in which he found it on arriving in this metropolis of charlatanism. He remarks (p. 53.) that "Dental surgery as hitherto practised, may be chiefly considered as being founded upon

empiricism ;" and then he commences upon his favourite theme, which fills up about two thirds of this learned publication, namely an attack on Hunter, Fox, and Blake, and asserts:—

"*That little or nothing has been done by any of these authors, or by any other writer who has yet appeared, for the pathology and practice of this interesting art.*" This state of things he avers, "not only exposes the profession and the unwary public to the errors of the dentist, but it also leaves the greater opening for the most ignorant and impudent pretenders to assume a profession which they utterly disgrace, and which they must render a horror to those individuals who are weak minded enough to become the dupes of their empiricism."

Lest we should improperly limit these remarks to a few of the underlings, which must be in every profession, he guards his point by adding, that

"These abuses are not confined to the practice of the inferior orders of this body, but also of such as are held of good reputation even by the medical profession."

It is needless to enlarge upon this subject. It is impossible to conceive our author's reasons or grounds for thus libelling a whole profession, for thus attempting to degrade the medical body, by a charge of want of information and discernment, except it be to lead the public to believe themselves deluded, or blame themselves for their stupidity in placing their confidence still in their native practitioners, or, in other words, in employing any one but Mr. Leonard Koecker, the author of this most *imposing* work on dental surgery.

He however reiterates, and presses these arguments and observations to a most astonishing extent ; and not confining his unqualified assertions to the practitioners of this country, involves, in one common mass, the learned and unlearned, the good and the bad writers who have appeared on the Continent, dooming them all to oblivion, as writers who have only contributed "*to increase our stock of Dental Literature,*" which he asserts, is devoid of every thing which can "furnish them with sufficiently just grounds and solid principles for the innumerable speculations and theories which they have advanced." With what contempt must such ignorant remarks be read by every one who has glanced at the immortal writings of Serres, Merjolin, Bichât, Cuvier, &c. ! ! These men have done more to give us "*just grounds of theories*" on this subject than we are afraid will come across the Atlantic for the next century ; and yet this mighty savant does not even deign to notice them.

If, instead of showing this unavailing spleen against such men as I have named, he had favoured us with a history of the gradual improvement of the physiology and pathology of the teeth, since the time of Monro, Hunter, Fox, and Blake ; and had he added

a notice of the accurate views contributed to our knowledge by many eminent French writers who have appeared since their day, the profession would have felt their obligations to Mr. Koecker, and the public would have appreciated and rewarded his researches. Had he confined himself to merely venting his spleen and ignorance, I should have dismissed him here; but I cannot restrain my indignation when he attemtps to falsify, in direct terms, the assertions of our respected countryman Fox, as he does at p. 320, where, in allusion to the 8th figure of Mr. Fox's eighth plate, he says, "I indeed believe that Mr. Fox did not himself see the case he thus describes," and makes an elaborate but unfortunate attempt to prove the impossibility of such cases. Again, in allusion to others of his figures, (p. 144.) he says:—

"For the present I shall content myself with assuring the reader that, I have never seen a case of such a diseased state of a tooth, as Mr. Fox describes, and exhibits in his engraving, excepting where the teeth were considerablyff eted by some one or other primary disease."

And (at p. 319.) in speaking of the doctrine and practice connected with cases of this kind,

"There is no other way for accounting for such doctrine, than by attributing it to a weak credulity, or love of the marvellous, or a desire to impose upon the world."

The bare assumption of such a thing is enough to excite the indignation of every one who is at all acquainted with the upright and honest character of the late Mr. Fox, who, I can safely say would rather have shunned the light for ever than have offerred any thing to the public in which he was not strictly supported by facts. Indeed I have hardly patience to tell the writer before us, that, fortunately for the dishonoured *manes* of that worthy man and excellent author, the proofs of his accuracy are left behind him, and are now the property of that industrious physiologist, excellent surgeon, and scientific dentist, Mr. Bell, who labours, so effectually in teaching and adorning science in so many departments; I mean to be *distinctly* understood, that, the specimens from which the figures above alluded to have been engraved, and every other in Mr. Fox's work, which Mr. Koecker says "he believes Mr. Fox did not see himself," *are not only in existence*, in that part of the Museum of Guy's Hospital more immediately under the care of Mr. Bell, accompanied with many other specimens of parallel cases, (although Mr. Koecker most unfortunately for his honour as a writer, has, as he expresses himself "no doubt that the first case of this kind originated in some bungling accident or *ingenious deception;)* but what is more, Mr. Fox gives specimens of nothing but what every

dentist who has had any practice at all must have frequen topportunities of seeing.

I consider it very disagreeable to the feelings of every liberal minded man, and very much calculated to impede the advancement of science and just reasoning, when men throw off the respect which is justly due to merit. It would be fruitless, and very degrading, to follow our author through the grossness which he deals out with the same liberal hand to all, in distributing such epithets as "*rude and murderous*," applied to what he styles "the hands of those who are equally a disgrace to the profession, &c."

After thus insinuating the criminality of all other members of the dental Faculty, lest we should think he has no bowels of compassion, he, in my opinion, rather sacrilegiously puts himself in the position of our dying Saviour on the cross, and thus (at p. 361.) ejaculates this prayer for their dying and sinful souls :—"*Father forgive them for they know not what they do.* Luke xxiii. 34.

A few words on his cases, and then I have done. Although I have not accused Mr. Koecker of charlatanism, I leave the public to judge of the propriety of such a charge from the following remarks. He introduces forty-three narratives, or *Stories*, which he calls *Cases*. These, in general, commence by an assurance of the "*respectability*" of his patient; and the following is an example of the way in which they generally conclude :—

"The operation was immediately assented to, and successfully performed in a few minutes, notwithstanding the great difficulties inseparable from the situation, and the parts were restored to complete health in a short time.—" (p. 263.)

To allow the reader to judge how far these reports may be considered as valuable authentic authorities, I shall confine myself to very few remarks. At page 78, Mr. Koecker gives us ten pages of very interesting matter, which commences :—"Of the following I am myself the subject." He here describes all the horrors of tooth-drawing, and how he committed that major operation on himself, no less than *eight times*, and how he *lost* two wisdom teeth, in consequence of "*his never having got them*," as he says "the formation of which seem to have been prevented by the unskilful operation related in the former pages." I suppose the passage he alludes to is that in which he says, (p. 80.) "The wisdom teeth of my under jaw have never made their appearance, their absence being, I presume, to be attributed to the irritation of the parts about the usual period of their formation." That "*usual period*" must have occurred when he was in his mother's womb. What irritation of the parts can

he possibly mean? The interesting corollary to this instructive case is, that he assures his "readers that he would rather at any time suffer this pain of tooth-drawing," *by himself, however,* "than be the spectator of the agony of a very timid patient about to undergo the same operation."

I cannot help extracting a few sentences from his eleventh case, (p. 112.) to show the great anxiety evinced throughout the whole of these reports to study effect. A young lady is made to write her own case, and thus talks in the most learned, appropriate, and technological style. "Constant, faint, gnawing pains in my gums, membrane of the mouth and cheeks." "But I am now convinced that the disease is in my gums and remains of the alveolar processes, and as I was told that was a part of his profession Mr. Koecker was supposed to be very skilful in, it makes me very anxious to have his opinion!" "You will remember how long (many months) the sockets of my large molar teeth stood open!" "After suffering for many months, I had the gums opened, they were so hard and thick the dentist said they were like bone, the sockets were not the least absorbed, of course rough and in some parts exfoliated." "Under an idea that my complaint proceeded from neuralgia, I was advised to have the mental nerves divided at the chin, but it did no good." "There seems to be an idea here that if the sockets are not carious there can be no disease there, but I think Fox mentions otherwise!!" The reader will not fail to remark that this is the production of a young lady, whose "eyes are beginning to be much affected, which must plead an apology for this sad scrawl."

En passant I may remark, that in his narration of case 10th, Mr. Koecker mentions that "twenty-one teeth and roots were extracted," and "that fourteen front teeth in all were left remaining." These two numbers put together make, I think, *thirty-five teeth in all*, which this singular "*literary gentleman*" must have had. When I mention that he gives an account sometimes (as at p. 168,) of no less than "*in all sixty-two operations*, which a young lady is said to have submitted to, it will not be strange if I do not notice any more of the deviations from the *ordinary* course of nature which he seems to have encountered.

In order to show with what elaborate minuteness he brings forward every thing, by means of which he can at all increase the numericals of these Cases, I shall here quote at length from p. 239.

"*Case* 21.—In the case of a young gentleman, of Philadelphia, the nerve of a tooth was found perfectly exposed, and to judge from the

appearance and from the history of the case, had been under the influence of this disease, fifteen or eighteen months. I extracted the tooth and have it now in my possession ! !"

He talks of young ladies making journies "of upwards of 1300 miles, for the sole purpose of obtaining the best advice for the cure and preservation of their teeth ;" and (at p. 355,) he excuses himself from speaking much of the "many affecting proofs of confidence from *families, and parents, and children*" in these very affecting and appropriate terms :—"I cannot permit myself to say any thing more on the subject in this public way, nor should I mention it at all were it not a consolation and relief to my heart." We cannot wonder at such feelings when we see, (as at p. 198,) "the tears of anxiety flowing down the cheeks of fathers, and families in the most poignant grief, all dried up, and "immediately relieved *by the removal of the affected tooth.*" The principal object of these reports seems, from the manner in which they are presented to us, to be merely that of contrasting his own doings with the "*mal-practices*" of his unfortunate and ignorant brethren. I shall, however, dismiss this subject in his own words, (p. 321.) "Operators become also sometimes authors, and in justice to their reputation, feel themselves bound to give a circumstantial account of all such cases, and these being naturally multiplied by the ignorance of other operators, become like legends and tradition on the *monstrous productions of nature,* wholly incapable of being refuted, on account of their actual claims to credit, but not on account of the number of believers in them."

When I first heard of this work I was delighted, and was really in hopes that it would have added something to our general stock of information ; and if Mr. Koecker had given merely a notice of his principles, described the manipulation of his practice, and clothed his cases in short and appropriate language, he might have done something to excite general readers to more attention to these useful organs, and might even have added a little to the knowledge of some practitioners. Of this there seems to be no doubt, that had he followed such a plan, and treated his brethren in a gentleman-like, or even in a decent manner, he might have been regarded as a useful writer ; or he might at least have proved that he was a man of liberality and generosity of sentiment. But when we find the practice of the *Back Woods* lauded, in language only to be found in the American dictionary, and our practitioners abused in the vein of Canadian savages, we at once laugh at, lament, and loathe the style of Mr. Koecker.

ART. IV. *On the Diseases of the Bladder and Urethra.* By S. T. SŒMMERING*. Second Edition, Frankfort, 1822.

A Treatise on the diseases of the bladder and urethra, from the pen of one of the first anatomists in modern Europe, we naturally took up with somewhat exalted expectations. If we have been disappointed, instead of visiting the author with condemnation, and thus exacting from him a tax for his eminence, we ought rather perhaps to confess that our assumption of excellence was somewhat premature. Our valued friend might justly remonstrate, if because master in one department, he were censured for want of equal excellence in another. If crowned with laurels in anatomy, it is no disgrace, if he shine with less brilliancy in surgery. However close the connexion between these two departments, they are distinct thus far, that a very perfect anatomist may be a very indifferent surgeon. We do not, of course, allude to mere manual surgery, nor do we speak of such accidental causes as may prevent the due cultivation of surgery by an anatomist, although great allowance should be made for such circumstances, in the case of Sœmmering, who residing in a small town, (Frankfort on the Main may be more properly styled a village) has been deprived of that extensive field of clinical observation necessary to him who would improve surgery. Exclusively, however, of such considerations, we conceive that the species of talent, which lead to success in the two departments are distinct, although not incompatible. Indefatigable application, and the turn for minute and accurate observation, are the qualities that form the anatomist; whilst excellence in surgery implies a much wider range, and more complicated exercise of intellect. In Great Britain, we are apt to overlook these distinctions, because with us anatomy is scarcely cultivated, except in subservience to surgery; not so in Germany, where there is a class of men, (of whom Sœmmering is an excellent example) who dedicate their lives almost exclusively to anatomical research; with whom anatomy alone is the main and ultimate object of pursuit. It should excite no surprise if these men, when they deviate from their accustomed track, do not rise above the level of mediocrity. So much by way of apology for this short treatise of Sœmmering, which, although not destitute of merit, possesses neither that degree nor that style of excellence which his high reputation

* Uber die Tödlichen Krankeiten der Harnblase und Harnröhre alter Männer bei S. Th. Sœmmering. Zweite Ausgabe, Franckfurt. A. M. 1822.

might lead many to expect. It was written in consequence of a prize proposed by the Josephine Academy of Vienna, for a dissertation on the diseases of the bladder and urethra, particularly as occurring in old age; with the exception of calculus. From the small size of the volume, (about 200 8vo pages,) and the great extent of the subjects it includes, we were prepared to find it sufficiently compendious; we were, however, somewhat surprized to find a work from Sœmmering, bearing so little of a pathological or anatomical character. On the pathology of these diseases, indeed, he touches very slightly, and in surgical anatomy he is equally sparing; what is more, his pathological views, as we may have occasion to point out, are not always the most enlightened. His pages are chiefly occupied with sketching the symptoms, the diagnostic marks, and treatment of vesical and urethral diseases; they thus become more immediately subservient to practical purposes. They contain little original matter, but display an extensive acquaintance with all that has been published on the subject, in whatever language, and are valuable for the number of practical facts brought together from every quarter. The following is an arranged table of the diseases treated of:—

- Bladder,
  - Inflammation,
  - Spasm,
  - Catarrh,
  - Ulcers,
  - Paralysis,
  - Fungous Excrescences,
  - Unnatural Folds (of the mucous membrane),
  - Fleshy Excrescences (polypi),
  - Incontinence of Urine,
  - Hæmaturia,
- Prostate Gland,
  - Inflammation,
  - Ulceration,
  - Abscess,
  - Chronic Enlargement and Schirrus,
  - Scrophulous Engorgement,
  - Dilatation of excretory ducts,
- Urethra,
  - Suppuration of Cowper's glands,
  - Stricture,
  - False passages,
  - Fistulæ,

Of *inflammation* of the bladder, our author describes two kinds—the first under the title of deep inflammation, or *cystitis*; the second under that of catarrh. Here, however, he appears to labour under considerable confusion of ideas. In the first

place he does not distinctly state, in which tissue of the bladder he conceives the former species to have its seat. He speaks of it in one place as if it were usually confined to the mucous membrane, extending to the muscular coat only in severer cases; whilst in describing its *post-mortem* characters, he says that traces of inflammation are exhibited not only in the proper coats of the bladder, but also the portion of *peritoneum* covering it. He next remarks that this inflammation is rarely confined to the portion of peritoneum covering the bladder, but is more general; and he then sets comprehension at defiance, by stating, that the vesical peritonitis does not even appear to originate in the vesical portion of peritoneum, but merely extends to it from some remote part of that membrane. The truth is, that inflammation of the mucous coat of the bladder *is almost never combined* with that of its peritoneal covering; this latter being in general merely the extension of inflammation from the general membrane of the belly. In treating both these kinds of inflammation of the bladder, he neglects the very essential distinction between their acute and chronic forms. What he has written on catarrh of the bladder, is marked by a similar want of precision. Thus, he mentions thickening, ulceration, adhesion between the bladder and adjacent organs, among the morbid alterations produced by catarrh; and, moreover, quotes as an example of catarrh, a case of intense inflammation of the whole substance of the bladder, which proved fatal in a few days, leaving its walls thickened to half an inch, and lined with false membranes. He represents retention of urine as a general consequence of inflammation of the neck of the bladder. So far as our experience goes, strangury and vesical tenesmus are much more frequently its results than retention. Again, he says, that when inflammation of the bladder involves the lower orifices of both ureters, a circumstance which he represents as common, they are rendered impervious to urine; the ureters become distended, inflame, and may even burst. Is this state of parts depicted from nature or from conjecture? Is there any instance on record, where an obstruction of the orifices of the ureters to the degree described, arising from simple inflammation, has been ascertained, by the only mode in which it could be ascertained —dissection? Sœmmering adduces no such instance, and we believe nobody else. The all-powerful part assigned to the *gouty diathesis*, in exciting *cystitis* and *catarrhus vesicæ*, the project of curing these diseases by mercury, when syphilis is supposed to lurk in the system; the peculiar acridity ascribed to the urine of the aged, and the astonishing efficacy of a course of grapes in curing inflammation of the bladder, are errors, perhaps

less chargeable on our author individually, than on the national school in which he has been reared. We are happy, however, to coincide with M. Sœmmering in his animadversion on a therapeutical error, which we believe is generally prevalent in this country. We allude to the internal administration of nitre in acute inflammation of the urinary passages. It has been proved by numerous experiments that this salt passes into the urine without suffering decomposition, so that it must necessarily add to the irritating properties, already too great, of that fluid.

In the short chapter on Ulcers of the Bladder, we observe several points respecting which we are not prepared to subscribe to the dogmas promulgated by M. Sœmmering. Thus we do not admit the agency of the venereal virus in producing ulcers of the bladder; neither do we know on what evidence he has set down the long continued use of mineral acids as one of their principal causes. In noticing the cases reported by authors, in which portions of the mucous membrane of the bladder are said to have been discharged with the urine, M. Sœmmering suggests that inspissated mucus may have been mistaken for portions of the membrane, wholly overlooking the true explanation of such cases, which consist merely in the detachment of false membranes formed by inflammation. Again he talks of the excretion of pus from the bladder as synonymous with ulceration of its coats, and overlooks the fact, that like other mucous membranes, that of the bladder may secrete pus, without ulceration; a fact, not less interesting in a pathological than important in a practical point of view. To distinguish between ulceration of the bladder and ulceration of the kidney, M. Sœmmering regards Wintringham's diagnostic mark, founded on the characters of the pus, as an infallible guide. Wintringham * remarks that the pus formed by the kidneys resembles that of a common abscess, and readily diffuses itself through water; whilst that given out by the bladder is tenacious, viscid, and heavy. Conceding to M. Sœmmering that this distinction may be valid in a certain number of cases, we know, from experience, that it does by no means invariably hold good, and that it cannot be relied on as a diagnostic test. We distinctly remember the case of a young female who was under our care about two years ago for an affection of the bladder, which dissection afterwards proved to be ulceration. It being supposed at first a case of stone, she was sounded with a silver catheter, when a small quantity of urine escaped, having precisely the appearance of the pus

* De Morbis quibusdam Commentarii, Londini, 1783, No. 318.

from an abscess, mixed with water. Her urine was afterwards examined, and always retained the same appearance, being perfectly free from any viscid or cohesive matter.

Spasm of the bladder is, in a great majority of cases, symptomatic of inflammation or organic disease, either of the organ itself or of some neighbouring part. Its existence as a primary disease has been denied by Chopart and other French surgeons; but whilst we acknowledge that inflammation of the bladder has, in a multitude of cases, been mistaken for spasm, (a remark applicable to a majority of the cases given by the older authors) we believe the bladder to be as much susceptible of an idiopathic spasm as any of the other muscular viscera. M. Sœmmering ranks it as a distinct disease, and labours much to establish the diagnosis between it and inflammation, a point of considerable importance when we consider the dangerous consequences of a mistake. We may remark, *en passant*, that the tincture of the muriate of iron was not recommended by Mr. Cline for spasm of the bladder, as stated by M. Sœmmering, but for spasmodic contraction of the urethra. Although we are not aware of its having been tried in the former disease, its beneficial effects may be reasonably presumed from analogy.

The subject of puncture of the bladder M. Sœmmering treats at some length. He enters into a minute examination of the comparative merits of puncture by the *rectum*, and the puncture above the *pubis*. He keenly maintains the superiority of the latter, and adduces a host of authorities in its favour.

In several of the subsequent chapters, we do not observe any thing that calls for particular remark.

An hypothesis, which M. Sœmmering has broached touching the origin of stricture, we fear, will call forth a smile from the English pathologist. He conceives, that from the habitual depending position of the penis, a *stretching* of the internal membrane of the urethra takes place at the angle formed by the *penis* and the pubis, in consequence of which undue extension, arise inflammation, and its consequent stricture.

When the introduction of the bougie is prevented by spasmodic contraction of the urethra, he states, that the most effectual means of removing spasm is the exhibition of an emetic. A similar effect, he informs us, may be obtained by "burning sulphur under the patient's nose;" in other words, we presume, by the inhalation of sulphurous acid gas.

M. Sœmmering is decidedly hostile to the treatment of stricture by the caustic bougie.

ART. V.—*A Manual of Pathological Anatomy.* By J. F. MECKEL, Second Edition. Leipsig, 1826*.

Many of our readers are probably acquainted, at least by name, with this celebrated work of Meckel, in which he has taken the lead of his contemporaries, in those views of the relations that pathological anatomy bears to physiology and comparative anatomy, at present so generally received, and which have tended materially to assist the progress of all three sciences; but more particularly to rescue pathological anatomy itself from the reproach under which it long laboured—of being merely a catalogue of wonders, without that connexion which a rational theory, (if we must call it so) can alone afford. To those who may be incompletely informed of the nature of the views to which we allude, it is important to premise, that the sense in which the term pathological anatomy is here employed, is considerably more extensive than the idea usually attached to it, and that it is used, perhaps, with some degree of inaccuracy and inconsistency, so as to include various original malformations and deviations from the normal state, which may not be, and very commonly are not, attended by any corresponding disturbance or imperfection of function—in fact, have no claim to the title pathological. So much is this the case, that in the work before us, of two large volumes, a small portion only of the second is devoted to the examination of those changes of form and structure which occur subsequent to birth from the effects of accident and disease, and which alone can with propriety be considered as morbid. Nor is it difficult to discover the cause of such a disproportionate attention to one part only, when we consider that the opportunity for establishing the relations we have spoken of is confined almost exclusively to such deviations from the regular form of parts as are original, independent of external causes, and which, if we may be allowed to use a metaphor, enable us to detect Nature in every possible stage of those successive conditions of existence, passed through by every individual animal organism, in its progress to its perfect state; the number of stages in each individual member of the series of animals, being, as we have every reason to believe, precisely proportioned to the degree of perfection it is destined ultimately to attain, as a constituent part of any given species of

* Handbuch der Pathologischen Anatomie, von J. F. Meckel, Leipsig, Zweite Ausgabe, 1826.

the animal creation. In fact, however practically useful morbid anatomy, properly so called, may be, (and even in this point of view its value may have been considerably over-rated), its interest in regard to general science, and to the study of nature at large, is comparatively inconsiderable, and cannot for a moment be put in competition with that attached to the investigation of the remaining parts of the study of the deviations of form and structure from the normal state. To use the words of Meckel himself, "that original malformations are more interesting than most of the changes in structure, and deviations in form, which take place during life, will scarcely be denied, except by teachers without originality, or the students they mislead, who estimate the value of a study by the extent of pecuniary profit they may expect to derive from it, rather than by its scientific tendency, and the degree of influence it is calculated to exert over other studies, and the formation of the intellect."

The views to which we have so often alluded admit of being briefly stated, though the proofs on which they rest, and from which they are in fact strict and logical inductions, are in themselves multifarious, and rendered more difficult of access by the manner in which they are dispersed through records sometimes obscure, sometimes imperfect, and often so perverted or misinterpreted by those who made them, that their true character can be discerned by those only who combine the penetration of original genius with the advantages afforded by a methodical system, and the power that attentive and patient study gives of contrasting and comparing them with facts either really or apparently correspondent; and thus disentangling truth from the mass of extraneous or erroneous matter under which it lies hidden.

Were we to attempt at once to give a perfect idea of all the contents of such a work as Professor Meckel's, two things would almost inevitably ensue; we should be so prolix as certainly to fatigue, probably to disgust our readers, and what, with all possible deference to them, we think yet more important, we should fail to accomplish the object we had proposed to ourselves. Though such an attempt would therefore be manifestly injudicious, we shall not perhaps incur the same censure if we content ourselves with briefly stating the principles on which the author proceeds, or rather to which he has attained, and then give a specimen of the manner in which they are established, as relates to an individual organ. Such is our purpose in this paper; and as our continuation of the subject at a future period must depend on circumstances in which we are but indirectly concerned, it will be most advisable not to make promises we may be unable or unwilling to perform.

Though in the present instance we intend to confine ourselves to the illustration of the nature and mode of origin of a particular class of malformations, yet clearness and precision require that we should give a general idea of the theoretical principles applicable to all.

Although all malformations consist in deviations from the natural standard of any given species, yet the extent of this deviation in an individual, or in any of its organs, is never such as to remove it from the series of organic bodies to which it should belong: hence, consequently, however extreme the malformations of animal bodies may be, they never cease to possess the animal character. The explanation given of this fact consists in the circumstance that all animal organizations are but modifications of one and the same; and that in the superior animals, most malformations very commonly present themselves as deviations from the standard proper to *them*, because these animals, in the various stages of their progressive development, pass through or beyond conditions of formation which exist permanently in those that constitute the inferior classes. So also, there are certain limits to the extent of deviation, which, even in the most extreme cases, bears a certain relation to the normal standard, thus affording the best and most convincing proof that, even in these apparent irregularities, the operations of nature are regulated by established laws, and a fixed order of succession. A similar inference is deducible from the fact that each organ has a tendency to observe a peculiar order or character in its deviations from the normal state, which obviously coincides most perfectly with the supposition that each organ passes through certain determinate stages of formation in its progressive advance to its ultimate state of perfection.

It will be seen also, that this doctrine of the successive stages of formation, presented by individual organs, and consequently by the organisms, of which they are component parts, is directly and mutually related with the doctrine of generation in general, and more particularly with that part of it which concerns the existence or non-existence of pre-formed germs.

In fact, if itself fully established, it forms the strongest and best argument against that specious but delusive hypothesis, in as much as it would on that view be necessary either to suppose that each germ contained within itself germs of each successive stage of formation, or, that the germs of all malformations existed as such from the first creation.

It is obvious, however, that any such theory of a succession of stages of progressive formation, though affording a satisfactory explanation of the manner in which those malformations,

the essence of which consists in imperfection—in other words in a more or less complete impediment, or retardation of the progress of the succession of formations, originate—would yet be inadequate to the elucidation of malformations of another class; those for instance, which consist in a more or less complete duplication of organs, or in a more or less perfect approach to the formation of two individuals of a species. It is necessary, therefore, as far as regards such cases, to resort to the interposition of other principles. The subjects to which these principles relate are without the range of the particular point which we have proposed to illustrate. We shall, therefore, content ourselves with stating, that Meckel altogether denies the influence of purely mechanical causes in the production of this and other classes of malformations; on the other hand, admitting the existence of a formative or plastic force or forces, though without at all pretending to explain their essence, he considers it more rational to refer the occurrence of malformations to the intervention of powers disturbing or suspending the laws according to which they act in ordinary cases.

"If this formative power alone acts upon the male and female fluids, the result is the normal form of the embryo; on the contrary, a deviation takes place, when its actions are disturbed by the occurrence of any impediment or irregularity, whether the disturbance exists in the ovary, the fallopian tube, the uterus, or is produced by a morbid condition of the generative fluids themselves;—for it is evident that a third force, formed by the combination of two others, must have different results from those which ensue when the formative force alone operates."—p. 37.

The precise mode in which any such combination of powers must operate in the production of malformation must of course be obscure, though the fact is in itself probable. In applying the principle to the instance of the duplication, or multiplication of organs, Meckel reminds us, that the embryo, in the earliest periods of its existence, consists of two perfectly distinct lateral halves, which are scarcely in contact. Why, he asks, may we not suppose that by an increase of the activity of the formative power, each of these halves may be developed in a greater or less part of its extent, so as to form a body of which the component parts are more or less completely double? He compares this mode of duplication of the embryo to the formation of new animals from the divisions of a Polype or an Actinia; adding, that the earliest stages of its existence are still more imperfect than that presented by them. Were the embryo permanently to continue at that stage of development, there is no reason to doubt that both halves might exist distinct, and

to account for the duplicate malformation it is only necessary to suppose a more perfect development of each half into a perfect body, the two halves remaining attached in a greater or less part of their extent.

But to return to the class of malformations, with which we are more immediately occupied, we will recapitulate the principles we propose to illustrate, and then proceed.

Each individual of the higher classes of animals presents in the progress of its development the same series of stages as that observed in the whole animal kingdom, and of which the various genera and classes form the members; in as much, as from the moment of its first origin, to the period of its completion, both as regards its internal and external organization, it passes through all the forms which exist permanently in every animal lower in the series than itself. If any circumstance, therefore, impede the development of an organ, or organs, it is easy to see that the appearances presented must correspond to the stage at which the interruption took place; and that we may thus obtain every possible variety of formation between the absolute deficiency of an organ or organs, and the state of ultimate and perfect development. The general principle is applicable to all organs, but it is not any where displayed in a more interesting or a more obvious manner than when applied to the elucidation of malformations of the heart. In addition to the imitations of the forms of the organ in inferior animals, and in the various stages of fœtal existence presented by those malformations, there are others, consisting in a complication of superior with inferior forms, and produced by the advance in the formation of one part of the organ, after a stop has been put to the development of others; a circumstance which it is necessary to bear in mind, in order to explain the occasional incompleteness of the resemblance of the abnormal forms of the heart, to the various stages of development of the organ in the embryo and animals.

Deficiency of the Heart.—It is not surprizing that the heart should be wanting, when only the lower half of the body exists, though even in such cases, it is often more or less perfectly formed; but the deficiency of the heart and lungs, whilst the head and thorax remain, is among the rarest kinds of malformation. Two such cases have been recorded; one by Marrigues, *(Mem. de Mathem. pres. a l'Acad. des Sc.* vol. iv. p. 123.) and another by Daniel *(Sammb. Med. Gutachten,* Leipzig. 1776.) In the former, besides numerous other malformations, the thorax was distended by a large bladder filled with limpid fluid, and contained neither heart nor lungs, which, as well as

the trachea, aorta, vena cava, and thymus were altogether wanting.

Malpositions of the Heart.—The most remarkable are its situation lower than natural, or in a perpendicular direction. The former evidently consists in a retardation of development, the organ in the earlier periods of fœtal existence being received in a depression between the two lobes of the liver. Such was the nature of a case recorded by the late Mr. Wilson, (*Philos. Trans.* 1798.) where the heart, which was malformed, was placed in a depression in the liver, a part of the diaphragm, and the whole of the round ligament of the liver being wanting. This position also has the same relation to that of the heart in birds, as the occasional vertical malposition, to that commonly found in most vertebral animals. In a case related by Sandifort, *(Obs. anat. path.)* the heart was placed vertically behind the sternum, the foramen ovale being very much open, and the eustachian valve very large. In a similar one by Klinz, (*Abhand d. Josephs, Academie. b.*1.) the aorta, immediately after its origin, divided (as is the case in many animals,) into ascending and descending branches; and one lung was wanting, as is the case in serpents.

Malformations of the Heart.—The cases of this nature, which have been recorded, afford instances analogous, not only to the forms of the inferior Mammalia, but also of Reptiles, and even of those imperfect approaches to the development of this organ, presented by Insects and Crustacea.

(A.) The lowest form of the heart, as well in the series of animals, as in the embryo of the higher species, consists in a longitudinal canal, which in Insects is closed, of uniform size, and has no vessels proceeding from it; whilst in the Arachnida it is curved, dilated anteriorly, and has an imperfect vascular system attached to it. In an acephalous monster, described by Zagorsky, (*Nov. Act. Petrop.* T. 15. 1806.), the situations of the heart was occupied by a longitudinal solid mass, from which the vessels arose. The solidity of this mass agrees with the circumstance that solidity of organs, which in the higher animals are hollow, appears to be an attribute of the inferior kinds; e. g. the absence of vessels in insects, and the solidity of the lower end of the intestine in bugs, as observed by Treviranus. Its oblong form coincides perfectly with that found in the Squillæ, and other genera of Crustacea. Another case, related by Roederer, *(Comm. Soc. Goett.* vol. 4.) presented a single ventricle, the place of the auricles being occupied by a simple dilatation, extending from the vena cava to the heart, without muscular fibres, and opening into that organ by an orifice,

scarcely larger than the diameter of the vena cava. The single cavity of the heart was incompletely divided into four cells, without any intervening valves or septum. In this instance the single cavity without valves reminds us of the heart of Crustacea, and the dilatation of the vena cava, not only of the membranous dorsal vessel of Insects, but also of the dilatations of the cavæ (distinct from the auricles,) occurring in many Reptiles and mammalia, e. g. proteus, siren, the desman, otter, and seal.

(B.) *Reptile-like form of Heart.* This form is of more common occurrence than the lowest one just noticed. It presents two varieties:—

(*a.*) The lowest form of the heart of reptiles; common also to mollusca and fishes; one ventricle and one auricle. In the Batrachian reptiles (frogs, salamanders,) the heart consists of an auricle and a ventricle, the pulmonary arteries being branches of the aorta, and the pulmonary veins entering the vena cava. There are but few specimens of malformations representing this form, which is the next above that of the Crustacea. The case recorded by Wilson *(l. c.)* is of this kind. The heart, which was placed in a cavity in the liver, consisted of a very large ventricle and an auricle. The former gave origin to an artery which ascended into the thorax, and divided into two large branches, of which one ascended as the aorta, and the other bent downwards to form the pulmonary artery. The two branches were distributed in the usual way, except that the bronchial arteries were wanting, precisely as in the Batrachia. The inferior vena cava entered the lower and posterior part of the auricle, and the superior received the two large pulmonary veins.

In the Batrachia, the single heart presents no appearance of a division of the auricle and ventricle into two halves. As we ascend in the scale, however, the auricle is divided, at first imperfectly, but afterwards completely, into two halves; whilst the ventricle yet remains single. In serpents too, the pulmonary veins enter the auricle, and not the vena cava, whilst the aorta and pulmonary artery still continue to form a single trunk. So also in the embryo of the superior animals there are traces of the division into two auricles, before the rudiment of the right ventricle protrudes from the base of the left:—all which phenomena appear to coincide with the priority of the veins to the arteries, and are illustrated by the history of malformations of the heart. Thus, in a case described by Standert, *(Phil. Trans.* 1805), the auricle and ventricle were single, but in the former the presence of a narrow muscular strip, at the venous orifice of

the ventricle, gave evidence of the disposition to the formation of a septum.

In a case related by Tiedemann, (*Zoologie* B. I. 177.) there were two complete auricles and a single ventricle. The latter was here probably more developed than in the former instance, the form of the heart being compared to that of tortoises, and the pulmonary artery arising by a trunk perfectly distinct from the aorta.

(*b.*) Superior form of heart of reptiles: two perfect auricles and a divided ventricle.

The case last mentioned constitutes a transition to the form of heart found in Ophidian, Saurian, and Chelonian reptiles, characterized by the perfect separation of the auricles, and by the division of the ventricle into two parts. The instances of corresponding malformations on record are numerous, for as this formation is proper to the greater number of reptiles, so also is it the point at which the development of the embryo of man and mammalia is apparently most frequently retarded or interrupted.

The two forms of the heart of reptiles, represented by the malformations of the organ in the superior classes, pass one into the other: thus, for instance, we occasionally find the heart formed according to the lower, and the vessels according to the higher type; at other times there is a single ventricle, as in frogs, from which, however, the aorta and pulmonary arise separately.

As to the mode of origin of these malformations, it evidently consists in the persistence of the organ at a stage of formation which is natural in the early periods of existence. The observation of the incubated chick demonstrates that there are originally but a single ventricle and auricle, to which are subsequently added a second ventricle and auricle, together with the vessels belonging to them. In two embryos also, of seven and ten weeks, Meckel found a distinct aperture of communication between the cavities, which was proportionally smaller in the latter than the former.

The origin of the malformations corresponding to the lowest form of heart of reptiles, is referable to the earliest periods, when there is as yet no tendency to the formation of a second ventricle and auricle: the bulk of the heart is the same, but it has not been moulded to the superior type. Hence, in Wilson's case, the single auricle and ventricle were very large.

Those corresponding to the superior form of the heart of reptiles occur at a later period. The right ventricle does not appear until after the left, and probably in the first instance, forms a part of its cavity or an appendage to it. This appendage is

precisely at the base of the left ventricle, the point whence the aorta proceeds, which consequently appears to proceed from both cavities. If theprogress of formation ceases at this point, the communication of the two cavities and the origin of the aorta from both, will, of course, be permanent. These forms of malformation are generally accompanied by peculiarities in the origin of the large vessels. Thus, in three instances, the carotid and subclavian arteries arose separately on each side from the arch of the aorta. In two others the arteria innominata was on the left side, whilst the right carotid and subclavian arose separately from the arch of the aorta, and the right vertebral from the carotid. In three cases the aorta passed over the right instead of the left bronchus, and then passed behind the œsophagus to the left side of the spine, which is remarkable from the analogy it presents to the disposition of the vessels in reptiles, where there are two aortæ, of which one passes over the right, and the other over the left bronchus, in order to unite upon the spine. In the superior animals, the second aorta is represented by the ductus arteriosus, but the two aortæ in the regular order of formation unite in front of the trachea. Where the force of development, however, is imperfect, they deviate from each other, in correspondence with the interruption to the tendency to a consolidation of the two lateral halves of the body; and the trachea, which is probably formed at a later period, passing between them, the total disposition in those cases where the ductus arteriosus remains pervious, is precisely similar to that of the same parts in reptiles.

It would lead us too far away from our subject, to examine the effects of these malformations on circulation, respiration and the production of animal heat, which fall more immediately within the province of pathology.

(C.) The heart of Mammalia with the fœtal openings remaining pervious.

These cases differ least from the normal state; but even these are perhaps referable to a certain degree of similarity to the heart of reptiles, in as much as the pervious state of the foramen ovale is in some degree indicated by the simple form of the heart in frogs, whilst the persistence of the ductus arteriosus corresponds to the presence of the same part in addition to the second aorta in certain tortoises, together with the division of the aorta into two branches in the superior reptiles on the one hand, and on the other to its identification with the pulmonary artery in the inferior ones.

(*a.*) Pervious state of the foramen ovale. This malformation has even been mistaken by some, e. g. Botallius, for

the normal state. The development of the septum of the auricles must be viewed as having been interrupted at an earlier stage, in proportion as this opening is more extensive, or as there is a less perfect rudiment of the posterior part of the inferior cava or valve of the foramen ovale.

The aperture sometimes forms a very complete communication between the auricles, but generally its valve is so much developed, that it merely forms a canal of variable length, directed from above obliquely downwards and backwards. There are many interesting points of physiology connected with this topic, which, however, it would be foreign to our present purpose to discuss.

(*b.*) Pervious state of the ductus arteriosus. This is a much less frequent occurrence than the last, which is the more remarkable, because, in several reptiles, the ductus arteriosus and another similar vessel remain open through life, whilst the foramen ovale is perfectly closed. The idea that the two passages were always pervious in the same cases is quite incorrect. In at least a hundred hearts, which Meckel examined with this view, the ductus arteriosus was open but twice at the same time with the foramen ovale, and even then so narrow as to be only half a line in diameter next the pulmonary artery, whilst its orifice in the aorta could be detected only by the escape of some globules of blood. A case related by Brendel, (*Eph. N. C. Cent. 4. obs.* 166.) is interesting, from the fact that the pervious state of the canal was accompanied by an unusual size of the lungs.

In an important case by Wrisberg, (*Gœtt. Anzeig.* 1778.) a second smaller artery arose from the right ventricle, immediately below the pulmonary, representing the ductus arteriosus, and like it entering the aorta; a structure which perfectly accords with that of the superior reptiles, and reminds us also of the double ductus arteriosus of birds. In an instance related by Steidele, (*Samml. Chirur. Beob.* B. I.) the aorta arose as usual from the left ventricle, and was distributed to the head, and superior extremities; the pulmonary artery, on the other hand, after giving off two small branches for the lungs, was continued as the descending aorta without having any connexion with the ascending. Here the structure is closely analogous to the disposition of the vascular system in many Mollusca and Crustacea, where the aorta is formed by several trunks arising separately from the heart.

Here also is the place to consider the pervious state of the umbilical vein, ductus venosus, and umbilical arteries. Of these the non-occlusions of the ductus venosus is the most interesting

from the analogy it presents to the absence of arterial the (hepatic) part of the vena portæ, in all invertebral animals.

It remains only to say a few words on the retardation of the development of the external form and size of the heart.

(*a.*) Imperfect external form. Of this nature is the division of the heart into two points, which is always more or less distinct, even in the normal state of the human heart, though never so much so as in the fœtus, where it is described by Harvey as "bicipiti cono, parvos nucleos gemellos referens."—Not only does this form correspond to a certain stage of fœtal formation, but also to the normal and permanent condition of the heart in the Seal, Porpess, and Manati.

The smooth roundish form of the heart is a similar circumstance, corresponding to an earlier stage of formation, and existing also through life in several of the inferior Mammalia, and many Reptiles.

(B.) Incomplete development of the heart and vessels in size, &c. The least considerable deviation from the normal state of the heart consists in its smallness; a deviation which corresponds to the regular structure in reptiles and fishes, where the heart is proportionally much smaller, as compared to the body, than in the superior animals. In two cases of adults, where the heart was otherwise well formed, Meckel found its length, from the base to the point, in one, two inches—in the other, two inches four lines. Where the size of the heart was less, the impediment to its functions was considerable.

The incomplete development of the vessels may consist either in their smallness, or in their more or less perfect interruption, the one being but a greater degree of the other: the latter is by far the less frequent of the two. In the case published by Roederer, (*Comm. Loc. Goetting.* Vol. 4. p. 121.) the heart, which, with the thymus, was the only organ in the thorax, was unconnected with the aorta, except by cellular structure. The aorta ascended on the left side of the spine, not forming an arch, but sending the carotid and subclavian arteries directly upwards. In the case of a woman, 50 years of age, Paris (*Desault's Journ.*2.) found the aorta so contracted between the ductus arteriosus (its remains) and the first of the inferior intercostal arteries, as scarcely to equal the size of a quill, though its coats were not thin nor dilated above this point. All the anastomoses however of the subclavian with the descending aorta, were enormously dilated. Meckel the elder, (*Mem. de Berlin.* 1750.) found the aorta very much contracted in a girl of 18, who had long suffered palpitations of the heart, more particularly during the three last years of her life. Where it arose from the heart,

its diameter was only eight lines, whilst that of the pulmonary artery was thirteen. The comparison of the squares of the diameters of the pulmonary artery and veins with the square of the diameter of the aorta, proved that *they* brought one and a half times more blood into the heart than *it* carried out.

We must here conclude, conscious how imperfect the idea we have given of these novel and interesting views, for which we appear to be principally indebted to Meckel, though others have doubtless indistinctly recognized them before him, and write in such a style as would induce us to suppose that they conceived themselves entitled to the claim of originality. We need scarcely say that we allude to M. St. Hilaire. This is not the only instance in which the results of German talent have reached us through the medium of French pretensions to originality, and often not a little the worse for the changes they have undergone in their progress.

ART. VI.—*An Inquiry concerning that disturbed State of the Vital Functions, usually denominated Constitutional Irritation.* By BENJAMIN TRAVERS, F.R.S. Senior Surgeon to St. Thomas's Hospital. 8vo. pp. 556. London, 1826.

This is one of those works whose light comes to us through a cloud. We can make nothing of the index; nothing of the plan; nothing of the general views; in fact, nothing of it as a whole: but we can make something of the cases, and something of the detached observations. Mr. Travers, however, is by no means singular in this mode of writing; if he look into his library, he will find many works of the same description, which, in defiance of the injunction of the illustrious Stagyrite, have neither a beginning, a middle, nor an end. Writers of this cast succeed admirably in some kinds of writing, although altogether unfitted for others. Give them a subject which naturally divides itself, a disease which has its commencement, its acme, and its decline, its causes, its treatment, and its effects; and they will treat it with regularity, perspicuity, and ability; but on a general subject, or one which is not naturally well defined, such writers will break down, and leave their readers to their own resources. Irritation is exactly such a subject, and it has proved too trying a one for Mr. Travers, who leaves it in as much ob-

scurity as he found it, so far as regards an accurate definition of its nature, or the general principles by which it is governed.

Notwithstanding this, the volume is still highly valuable; the materials are good, although the edifice exhibit neither power of combination, nor skill in architecture. It is what we term a genuine work, written as a work ought to be, not for a particular private end, but to contribute to the general stock of information; it is the result, not of a general foraging excursion through medical literature, but of several years extensive practice, and of the enviable opportunities of observation afforded by an hospital appointment. Many of the cases, indeed, which are here reported, have occurred in St. Thomas's hospital; a circumstance which we must take into account, as modifying to a considerable degree their value as just criteria of the effects of the various causes of irritation. In every building where animal bodies are concentrated, and more especially where those bodies are in a state of disease, there is, notwithstanding every precaution, such an accumulation of the most powerful causes of irritation, that cases occurring in hospitals depart in this respect most egregiously from the general standard, and frequently present trains of symptoms altogether anomalous, and such as are never met with under other circumstances. Any one who has regularly visited for some time the large hospitals in Paris, will appreciate this remark in its full force; where irritative inflammation and gangrene are consecutive to so many operations; and where the surgeons have often to refer the unexpected and unfortunate turn of the malady to pernicious miasmata, and animal effluvia; but we need not go so far, for the wards of our own infirmaries have sometimes presented alarming devastations produced by the accumulated and concentrated causes of irritation.

We have used the term *irritation*, as employed by Mr. Travers, and by people in general, without knowing precisely what it means, at least we could not very easily explain it; yet we often meet with the term in medical and other works, and with its derivatives *irritative*, *irritable*, and *irritability*, which we hardly understand. Irritation we are told is the effect produced by stimuli—on what? on the constitution—here is the difficulty we do not know what the constitution is—it is not a tangible point, but an abstract idea made up of body and mind, of physical agencies and effects—of health and disease. It is the aggregate of which the various solids and fluids of the body, its tissues and fibres, its powers, functions, and systems, form the particulars. It is upon each, or upon all of these then that the stimuli producing irritation must necessarily act; and we may

hope by tracing this action from the agent to the substance acted upon, to arrive at some more definite idea of the meaning of the term. We shall first, however, endeavour to present the explanation and views Mr. Travers has given to us on this subject:—

"Every part of a living animal has its peculiar function, to the performance of which it is incited by an appropriate stimulus. Its susceptibility of the impression of such stimulus is denominated its irritability. This property is not confined to any particular form of organization, as nerve, muscle, or blood-vessel; it exists in every organ, simple and compound. It is possessed, however, in unequal degrees by different organs, and even by distinct parts of the same organ. It is not in the ratio of sensibility, nor vascularity, nor muscularity, nor any particular endowment, but according to the importance of the texture or organ to the functions of life. Thus muscle retains irritability longer than any other texture, and the heart later than any other muscle.

"The sign of irritability is according to the function of the organ; in some sensation, in others motion; in some a combination of these, and in others a result of such modifications of sensation and motion as escape our powers of perception, and of which we discern only the effects.

"Irritability, then, is an inherent property of the living system, and is not only indispensible to the functions of those organs by which life is maintained, but is the earliest and the latest indication of life.

"Irritability is possessed by different individuals in various degrees, and susceptible in all, of infinite modifications. The tone of the nervous and vascular system, and the actions of the secreting and excreting organs, depending on the orginal frame and constitution, the degree of physical activity and mental energy, climate, diet, regimen, and, in general, the nature and strength of the stimuli by which it is excited, are all modifying agents, direct or indirect, and lead to this variety."

According to our author, every part of the living animal owes its susceptibility of the impression of stimuli to irritability. Although this is not the meaning which is now attached to the word—we are yet willing to concede it to him, especially as it is that in which it was first employed. This term was invented by Glisson, and was by him meant to designate that vital power of organized matter, by which it re-acted on external objects brought into contact with it, in a manner which could not be referred to any power merely chemical, mechanical, or physical. Another philosopher, Gorter, extended the notion to vegetable life. Haller, however, restricted the meaning of the term to those changes produced by the vital powers which are cognizable to the senses, namely, to the corrugations and contractions of muscular fibre; and conceived the principle of irritability to reside exclusively in the muscular system, while sensibility was peculiar to the nervous system.

This division of Haller gave rise to much physiological controversy, as it did not appear evident which parts of the body were sensible or insensible irritable, or unirritable. It was also doubted whether irritability belonged exclusively to the muscular system, especially as it was found that when the nerves leading to a muscle were paralysed, the muscle no longer shewed any symptoms of this power. The term motility was at length invented, and conjoined with sensibility, formed the two vital powers admitted by physiologists. By sensibility was denoted the power of receiving an impression, and by motility the power by which living matter was put in motion in obedience to the impression received. Various physiological systems were subsequently formed, in which sensibility was taken in a wider or more restricted sense, according to the whim of each inventor of a new system.

Bichât, as is well known, admitted five vital powers. His organic sensibility denoted the power possessed by every living fibre of receiving an impression in such a way that the impression was not communicated to the mind. This latter power he designated by the term, animal sensibility. The phenomena exhibited by the muscular system under the action of stimuli he termed contractility, because contraction was the kind of motion which characterized these phenomena. This term, therefore, corresponded to the irritability of Haller, and the motility of other physiologists.

It will be perceived, from what has been just stated, that the vital powers have been generally reduced to two—sensibility and motility. It remains a question whether a muscle can receive an impression unless through the medium of the nervous system. If it cannot—which is our opinion—then these powers are reduced to one, namely, sensibility. It is unfortunate, however, with regard to this term, that it denotes in common language an affection of the mind, and hence its physiological meaning is liable to be misconceived. The word irritability is objectionable on a similar account. It has been thought that the difficulty might be removed by the word excitability, which is less liable to be misconceived, and the derivation of which from *excitare*, to rouse, is also more consonant with its application than that of sensibility, from *sentire*, to perceive, or than that of irritability, from *irritare*, to anger or provoke. Be this as it may, it is obvious that whatever word be used, the vital power denoted by it is that of responding to an impression in a mode which is neither chemical nor mechanical; and this power we have every reason to believe is only vested in the nervous system. This has, in fact, been almost demonstrated by the experiments of MM.

Prevost and Dumas, by whom the muscular contraction has been shewn to be produced by the galvanic fluid causing the fibres to assume a zig-zag form, so that the muscle seemed only to possess the power of contracting according as its fibres were thus thrown into action by the agency of the nervous system. The insensibility of muscles in paralysis, leads to the same conclusion.

Irritability, therefore, even if we give it the widest meaning it can consistently have, signifies the quality in nervous matter of being affected by stimuli. If we extend this susceptibility, as Mr. Travers has done, to muscle, to ligament, and to membrane; if we imagine that bone, although denuded of every nervous fibre, could yet be, by the mere principle of vitality, susceptible of the impression of stimuli, we must at least perceive that the manner in which such susceptibility could be viewed, would be so different from that manifested by the nervous system, that the one must totally differ from the other; and we must admit that by such extension of the term, we can no longer attach to it any definite meaning. Yet it is in this vague sense, that the author has taken it, and starting from such a point, it would be wonderful, if he escaped confusion in his subsequent progress; some instances of which we shall point out as we proceed.

Having described irritability in the healthy state, we subjoin what is said under the head of morbid irritability.

"Every organ has its peculiar mode of irritability. So long as it neither exceeds nor falls short of its due proportion, the harmony of the system, resulting from that of its constituent organs, is strictly preserved. But by a variety of causes, both internal and external, it is subject to be so augmented, diminished, or perverted, as to constitute a material deviation from health, or an actual morbid condition. In this view, it becomes a principal object of attention with the pathologist, as exercising a vast and wide influence over the effects of local injury and disease.

"An excess or deficiency of the natural stimuli, or the operation of noxious agents, will convert healthy into morbid irritability; and a natural stimulus applied to an organ already morbidly irritable, becomes an irritant. Light is the natural stimulus of the healthy retina; but let an eye, accustomed to the light of day, be exposed for a time to intense light, and a permanent spectrum is the consequence; or let an eye, long accustomed to the darkness of a dungeon, be suddenly exposed to broad daylight, and the same consequence follows. In the first case, the irritability of the retina was rendered morbid by the preternatural excess; in the second, by the preternatural reduction of its habitual stimulus.

"An irritable mind is one easily excited, and over excited in reference

to the occasion, whether to joy or anger, fear or pity. An irritable stomach is nauseated by many ordinary articles of diet. An irritable bladder is continually parting with its secretion before the stimulus of distention can be supposed to act. An irritable heart, if quickened by exertion or strong mental excitement, becomes tremulous and palpitating. An irritable skin breaks into a rash from many slight causes of excitement, both of diet and temperature; a plaster, which is in others only rubefacient, acts upon it like a blister. Irritable fauces are slightly sore with a change of the wind, or exposure for a few seconds to a current of air; and an irritable retina is distressed to dimness by a full light, and, like the mind, disturbed by the surviving representation of transitory impressions."

Here the confusion begins to manifest itself, for the term irritable, which ought simply to denote the possession of the vital power, irritability in common language, and in that of Mr. Travers, signifies a diseased condition of that power. In the case of the eye, which has been deprived for a time of the stimulus of light, and the irritability of which is said to have become *morbid*, we have this term indicating a diseased state applied to an organ in the most healthy condition. The alteration in the degree of sensibility of the retina, has occurred in obedience to a general law of nature, it is not connected with any diseased condition whatever. Mr. Travers might as well say that the palate of a hungry peasant, who had been longer than usual at work in the fields, had acquired a diseased irritability.

"Irritability is either proper or sympathetic. First; as applied to the system. If the body is deranged through the medium of the mind, or, *vice versa*, the mind through that of the body, it is sympathetic.

"If anxiety or apprehension excite the desire to pass stool or urine; the irritability of the affected organ is sympathetic.

"Sympathies are associations founded on a reciprocity of sensations and actions. Thus they are made up of sensibility and irritability.

"Mr. Hunter defines an irritable habit to be, "an increased disposition to act without the power to act with"; in another passage he describes irritability "over-action to the strength of the parts."

The reader will perceive in the above quotations, a further development of the views entertained by the author on this subject. He also will not fail to remark how the meaning of the word undergoes various successive changes, altogether inconsistent with the unvarying import which ought to be attached to terms in a philosophical investigation. Irritability for example, which before signified the general susceptibility of the action of stimuli, is now a disposition to act without the power—before, it was that principle by which the nervous system, in common with all other organized forms of matter, becomes susceptible of the above-mentioned action of stimuli—that is, it

constituted the principle of sensibility; now we find that sympathy is made up of *sensibility* and *irritability*, implying that the one is different from the other. Hence we must infer that the nervous system possesses two distinct species of vital powers; namely, sensibility and irritability; and that in the retina which had long been deprived of the stimulus of light, it is the morbid state of the latter principle that causes the change produced in the former.

Reasoning on the philosophic maxim, that it is not necessary to multiply causes, we should say, that the inability of the eye to bear the light, in the circumstances mentioned, is more rationally explained and more easily understood by stating simply that its sensibility was increased. If it be replied, that this modification of the sensibility depends on the state of the irritability of the nerve, then it is manifest that irritability in this sense denotes merely a condition of matter, and not a vital principle as at first described.

We transcribe the following, as illustrating, in a forcible manner, the practical meaning of the term irritable, as applied to temperament; the observations which follow are truly valuable:—

"Two gentlemen, about the same time, were the subjects of the common accident termed a broken shin. The injury was slight and of the same extent in both. One, accustomed to treat such casualties in his own person, simply defended the part lightly with a thin soap plaster, and without intermitting his habits of much daily exercise, both on horseback and on foot, suffered no further inconvenience. The other, making the same application, and using the limb with reserve, was, in the course of three days, compelled to assume the horizontal posture for nearly three weeks, suffering from a painful inflammation of the absorbents of the limb, and glands of the groin, and of the absorbent vessels encircling the loins, accompanied with a smart degree of fever. The bruise was, in this case, followed by an ill-conditioned sore, which, for many days, admitted of no other application than an emollient poultice.

"It is impossible from this constitutional difference in different individuals, for a surgeon, unacquainted with the habit of his patient, to calculate upon a beneficial uniformity in the results of his practice; thus the application of leeches to an inflamed organ is, in some cases as strikingly disadvantageous, as, in the majority of instances it is useful.

"Nothing shews the truth of this remark more in ordinary practice than the very various effects, in different individuals, of warm and cold applications to inflamed organs, as, for example, the swollen testis.

"From the same cause, the effects of vesicatories and escharotics are, in no small degree, capricious. The operations of laying open sinuses

and cysts, of extirpating small tumours tying hemorrhoids and polypous excrescences, of pivoting and implanting teeth, of injecting sacs and sinuses with stimulating lotions, and of passing bougies and sounds, are, occasionally, seen to produce very serious degrees of constitutional excitement; in some erysipelas, in others ague; in some continued fever, in others inflammation of the chest. The very remarkable diversity in the effects of medicine upon the system is notorious, but scarcely belongs to my subject. I have seen in more than one instance *acute pneumonia, and in another mania, set up by the excitement of mercury*, which proved speedily fatal without any previous organic disease, or prohibitory disposition."

We cannot pass over the following case, so illustrative of the genius of George Young; it is given in his own words.

"A healthy carman came under my care with a loose cartilage in the right knee-joint. It had several times occasioned him to fall suddenly, and he was very anxious to submit to an operation to get rid of it. It appeared to me desirable to accustom him, before the operation to the reduced diet, rest, and restraint, which would be necessary after it. He accordingly kept the house. On the second or third day of his confinement, I put on the roller and bound on the back splint, exactly as I intended to do after the operation, to keep the limb perfectly steady. This confinement of the limb occasioned a restless night, some fever, a whitish tongue, a quickened pulse, a little headache, spare and high coloured urine. He was very unwilling to continue the bandage and splint, to which he ascribed (and justly) all his constitutional disturbance, and the utility of which, prior to the operation, he could not at all comprehend. This circumstance, however, forcibly suggested to me the importance of accustoming him to restraint; it was therefore continued; the excitement which it had produced gradually subsided, and when I found that the bandage no longer occasioned any irritation, I performed the operation. Not one untoward symptom arose, the constitution was not in the least ruffled, and the wound healed by the first intention."

We now arrive at another modification of irritability, described as under:—

"Irritation is the name given to that state which is produced by an extraordinary excitement of the irritability either of a part or of the system: irritation is, therefore, local or constitutional. The phenomena of irritation are chiefly displayed in the nervous system, and it is thus distinguished pathologically from inflammation, which belongs to the vascular. Their relation is as intimate as that of these systems, of the extraordinary actions of which they are the results. As the causes and degrees of excitement are various, so are the signs and modes of irritation.

"I object to the term "irritative fever," as synonymous with irritation, because irritation and fever are, in their nature, as distinct as irritation and inflammation; although their reciprocal affinities are

as intimate and complicated as those of the nervous and vascular systems."

Thus an affection *sui generis*, one universally affecting the body, and distinguished like fever by a particular class of symptoms, is conceived to arise from an accumulation of the effects of over excitement of irritability, transferred to the body. Let us suppose that we had chosen to designate the vital principle by the term sensibility, then we should have had first a diseased state of the constitution, in which the sensibility was morbidly increased; and secondly a disease arising from the effects of accumulated sensations or impressions. "The phenomena of this disease are chiefly displayed in the nervous system;" that we may presume is the seat of the malady, if it have any habitation; and its proximate cause, we may conceive to be a morbid action going on in the nerves of the part where the malady is local, and in the brain and nervous system where it is general. We in fact conceive irritation to be nothing else than the increased sensibility or excitement of the nervous system, and regard the various phenomena ascribed to the disease by Mr. Travers, as merely symptoms of this nervous affection, manifested through the medium of the muscular and other tissues of the body; and we are persuaded that the reader of Mr. Travers' work, by carrying this idea along with him, will find all the phenomena of constitutional irritation explained by it, and will arrive at a more simple view of the nature of the affection; we admit that considerable modifications of nervous excitement may arise from the nature of the stimuli by which the impressions are produced, and by the part of the nervous system through which they are propagated. When the nervous system is excited, for example, by stimuli of an acrid nature, we believe that the symptoms produced in the body will correspond more to what is generally understood by irritation, than when it has been acted upon by narcotics; also, that the constitutional phenomena will partake more of the character of excitement, when they are the result of impressions which have been made on the nerves of sensation, or on the portions of the brain subservient to the intellect, than when they arise from impressions transmitted through the muscular or respiratory systems of nerves.

Local irritation is described as demonstrated by

1. "An alteration in the habitual and proper sensation or action of a part; as a depravation or suspension of function in an organ of sense; an aberration or delusion of perception; a vitiation, suspension, or redundancy of secretions; an irregular and involuntary action of muscles, or a partial paralysis, &c.

2. "Pain, unattended by any other sign of inflammation. The irrita-

ble joint, breast, testicle and prostate gland, give no evidence of inflammation. The irritable organ or its vicinity, has in many instances been affected by sub-acute inflammation at some former period, but not such as to leave any trace of an altered structure. A carious tooth sometimes occasions a tic douloureux of the dental nerve. Worms in the maxillary sinus have given rise to the same painful affection of the sub-orbitar nerve. Some calculous concretions, which form in the kidney, create severe local pain in those organs without a symptom of inflammation.

"The disease called tic douloureux exemplifies this fact abundantly. Numberless modifications of pain, viz. that degree of uneasiness which attracts attention to a part, and seems to admit only of a negative description, the varieties of prurigo, sub-acute and chronic inflammation about the orifices of canals, producing elongations and excrescences, or exulcerations and fissures, and the spasmodic contractions of the sphincters—are for the most part demonstrative of a remote local irritation, unattended by inflammation.

3. Inflammation. When local irritation is acute and permanent, inflammation ensues, which is proportioned in degree to the severity of the irritation and the habit of the patient. Of this, contusion, sprain, wound, and the operation of extraneous substances in the production of abscess and ulcer, under an infinite variety of circumstances, are examples."

The terminations of local irritation are resolution; local inflammation; or constitutional irritation. By resolution is meant a "gradual subsidence or retrocession, whether the crisis be natural, or the effect of art," when local inflammation occurs the original irritation loses its independent character. The third termination into constitutional irritation, Mr. Travers regards as the most important; it occurs from the irritation being propagated to the brain, and from thence to all parts of the system. This constitutional irritation is said to be direct or reflected, and to exist in various degrees, and under a variety of complicated symptoms; it is thus described:—

"The irritation which arises from injury or inflammation, when it passes from local to constitutional, becomes imminently hazardous; constitutional irritation being as much more dangerous than local, as the disorder of the whole is of graver importance than the disorder of a part.

"The causes of constitutional irritation, more especially the province of surgery, are the various forms of injury; as

"1. Compression, concussion læsion, or disorganization, chemical or mechanical.

"2. Inflammation, the result of local injury.

"The symptoms of constitutional irritation which are excited by severe injuries, and are unmixed with local or general inflammatory action, differ essentially from such as are set up by inflammation and accom-

panied by a general excitement of the vascular system. In some the cerebral, in others, the spinal medulla appears to predominate in manifesting morbid phenomena. The irregular and preternatural actions of the vascular system are conspicuous in proportion to the strength and distinctness of the symptoms of irritation; and *vice versa*, as the morbid actions of the vascular system partake of the febrile or inflammatory character, the symptoms of irritation are blended with them, and present a less prominent character.

"Constitutional irritation I consider to be of two kinds, direct and reflected; by which arbitrary distinction I mean to imply, that the first is wholly and immediately derived from the part, commences and is identified with the local mischief, and the constitution has no share in its production. The second, on the contrary, originates in a peculiar morbid state of the constitution to which the injury or inflammation has given birth, or, it may be, previously existing. The first is truly symptomatic, never originating spontaneously, and being immediately induced by the local irritation, is capable of being essentially mitigated or arrested by its removal. The second is occasionally purely idiopathic, and being oftener the cause than the effect of the local action, is seldom influenced by local treatment. In the first, the local appearances are conditions depending on local causes—in the second they depend on constitutional causes. The symptoms characterizing direct constitutional irritation are, in the nervous system, rigor, delirium, convulsion, coma—in the vascular, the fever of phlegmonous, suppurative, ulcerative, and gangrenous inflammation. Those which belong to reflected constitutional irritation, are, in the nervous system, epilepsy, tetanus in all its modifications, and other anomalous forms of spasm, mania, &c.—in the vascular system, the fever accompanying scrofulous and carcinomatous inflammation, erysipelas, carbuncle, &c. I deem it no objection to a division of this sort, that the parts are so blended and interwoven as to render the outline here and there obscure or even imperceptible;—it is a circumstance unavoidably resulting from the nature of the subject. Nay, if their boundaries did not mutually encroach upon each other, we might be assured that the division was too artificial to be founded on correct observation, and therefore leading to erroneous views of disease."

Mr. Travers next proceeds to state those circumstances which have most influence in the production of constitutional irritation by local injury, which he considers to be, 1st, *The texture of the organ injured;* 2d, *The description of the injury which is inflicted;* 3d, *The magnitude of the injury;* and, 4th, *The subject of the injury.*

Injuries of the *integuments*, of the head excite severer symptoms of irritation than of those of the body or limbs. Lesions of *muscular fibre* are severely felt, and are apt to be attended with spasmodic action. The system is irritable under injuries of dense texture, such as *tendinous* and *ligamentous* fibre.

The injuries of the lamellar texture of *bone* are not attended with peculiar constitutional irritation; but this is excited in a high degree by the adhesive and suppurative inflammation of the medullary membrane and periosteum. Injuries of *arteries* are little felt; but the continuous inflammation sometimes set up in *veins* is productive of high irritation. This is the case also with the lymphatic absorbent system. *Nerves* when injured occasion alarming symptoms of irritation. This arises either from the inflammation spreading along the neurilema, or from the propagation of the morbid impressions to the brain.

Narrow and straight wounds are followed with more disorder of the constitution than broad and bold ones. Contused and lacerated wounds seldom admit of adhesive inflammation, being the results of violent lesion, the texture is in part disorganized, and sloughing ensues.

The nature of the constitution also modifies the effects of the injury, as well as climate, regimen, and many other circumstances. The existence of scrofula often gives a serious character to slight wounds. In constitutions of this character, idiopathic inflammation is so obscure in its origin, and gives so little pain, that it is allowed to proceed unregarded until announced by some palpable sign of its effects.

The third chapter of the work is occupied with examples of direct irritation. When this state exists, it indicates a depression in the functions essential to life, either progressive or marked by alternate excitement.

"The first of these, namely prostration without reaction," says our author, "supervenes upon a degree of shock so intense as to destroy the irritability of the vital organs. The second, prostration with excitement, is the result of a less abrupt or intense degree of shock, and indicates a greater degree of vital power, the excitement being a partial evidence of the unexhausted irritability of the vital organs.

"The following are the more frequent causes of this condition:—

"1. Sudden, extreme, and unremitting pain, and certain affections of the mind co-operating with bodily disease.

"2. Injuries and operations of various kinds.

"3. Inflammation, the result of injury, or operation, terminating in suppuration or in gangrene.

"4. Exhaustion from hæmorrhage or colliquative suppuration.

"5. Poisons, animal, vegetable, and mineral."

A considerable part of the remainder of the work is filled with examples, illustrative of each of these causes of direct irritation. The cases here given are of the highest value, as they bear each of them so directly upon the point which they are intended to illustrate, while at the same time they convey the most useful

instruction. Their value is also enhanced by the practical remarks with which they are accompanied. We shall subjoin a case under each head.

Pain, when intense, and of long duration, is, Mr. Travers remarks, of itself destructive. Difficult parturition is fatal from this cause. Certain forms of mortal injury also are productive of sudden and excruciating pain. Death, in such cases, occurs before any morbid changes sufficient to account for it have occurred.

"I was called," says the author, "to a gentleman writhing with pain in the abdomen, which he had endured for the space of two hours previous to my seeing him, and described as unlike any that he had ever experienced. He accosted me in these words: 'Doctor, if you cannot put an end to this pain, it will very soon put an end to me.' So true was his prediction, that in twelve hours, from a state of comparative health, (he had been at the theatre the preceding evening) he was no more. His disease was an ulcer in the pyloric portion of the stomach which had perforated its coats, and allowed of the escape of its contents into the general cavity."

The influence of mental disposition, and especially of a tendency to maniacal affection in modifying the result of injuries or operations, is exhibited in the following case:—

"A young man, nineteen years of age, who had formerly been maniacal and confined in a lunatic asylum, was admitted into our infirmary with stone in the bladder. I operated upon him. The calculus was large, weighing eight ounces, and consequently required a free incision, but the extraction was effected with much less difficulty or violence than the magnitude of the stone led me to expect. Shortly after the patient was in bed he became very animated, and said he should soon be well now that the stone was removed. The animation increased, so that in two hours after the operation he could with difficulty be prevented from getting up. In five or six hours he was in such a state of mania that it was necessary to use the strait waistcoat. The maniacal symptoms continued till death took place, about forty-five hours after the performance of the operation. On opening the body I found the bladder thickened, but all the parts connected with the operation free from inflammation and in a favourable state. The brain could not be examined. In this case it is probable that the man's apprehension about the operation, the operation itself, and his joy at its conclusion, acted upon an organ which was predisposed to disease, and were the exciting causes of the fatal paroxysm."

Extensive burns present in their effects the most decided symptoms of direct irritation. From the phenomena we have witnessed in such cases, we feel certain that this irritation is nothing more than a highly excited state of the nervous system,

accompanied with its natural train of symptoms. The following case will illustrate this remark:—

"A girl, seven years old, was severely burned by her clothes taking fire. The parts injured were the throat, neck, and chest, to the navel; and both arms, even to the fingers. An hour after the accident the pulse was not to be felt at the wrist, but the extremities were not cold. Turpentine was applied to the surface, and a dose of laudanum administered. The child cried much during the first hour, after which she became quiet, but remained sensible to questions. Three hours afterwards she was comatose, and could not be roused. The extremities were affected with convulsive spasms. In this state she died, eight hours after the injury.

"Considerable congestion in the vessels of the pia mater and the plexus choroides. The fluid of the ventricles natural, and in healthy quantity. The cortical part of the brain darker than usual, from the loaded state of its vessels. Sections of the medullary part presented innumerable red specks. No morbid appearance in the chest or abdomen."

Mr. Travers' practice in cases of burns and scalds is given in another part of the work; but we shall quote it here, as it may be useful to our readers:—

"Burns and scalds are unattended with hæmorrhage. No species of injury exhibits the symptoms of prostration in a more marked degree than these, when of a severe description. The remedy upon which I rely in burns inducing this state, is brandy in gruel, in the proportion of one part of the former to two of the latter. This is administered in doses of a table spoonful or two at short intervals, until we obtain a sufficient distinctness and fulness of the pulse at the wrist, with a corresponding improvement of complexion and temperature of the surface. The bowels should be simply kept unloaded by means of castor oil or common injections. If there be much stupor, and the bowels have been previously costive I prefer to give ten or fifteen grains of the compound calomel and scammony powder. The use of opium, a remedy still generally employed on account of the patient's sufferings, I have abandoned, being convinced by experience, that in small doses it is inefficacious, and in large ones injurious. I have before observed, that pain is a good symptom in burns. I need scarcely observe, that the exhibition of the stimulus requires unceasing and judicious attention; it must be intermitted, if the pulse become bounding, and the patient flush. Nevertheless, in deep and very extensive burns of adult subjects, I have frequently found it necessary to persevere in its use for a week or ten days at lengthening intervals; occasionally intermitting, and always gradually withdrawing it. Not only has the partial remission of this plan been in some instances imperative, when re-action was permanently established, but symptoms of the head or chest have made their appearance which required blood-letting, either topical or general; and a smart purge of calomel and scammony I have found on such occasions

very useful. In deep burns the external remedy which I prefer is the turpentine and olive oil liniment, or turpentine and cetaceous ointment, upon the principle, though not exactly the plan, recommended by Dr. Kentish, of Newcastle, and subject, after suppuration commences, to such changes as the state of the surface may require. This appears to me to coincide advantageously with the internal use of the stimulant. The lime water and milk liniment, and when suppuration has become abundant, the calamine or chalk powder lightly strewed over the whole surface, and defended by the same or simple ointment thinly spread on linen, is the local treatment which I adopt in superficial burns."

Several unsuccessful cases are given, in which death quickly followed operations. The patients having become chilly soon after the operation, and having been either seized with convulsions, or having sunk into a state of deliquium. The unfavourable issue of these cases led Mr. Travers to inquire into the usual mode of nourishment, which induced him to adopt the treatment which proved successful in the following case :—

"A child, six years old, became restless within an hour after the operation, which had been in all respects favourable. Between five and six o'clock, the operation having been done at noon, he was cold, faint, without a pulse at the wrist, and apparently dying. In this state, gin and æther, diluted with barley-water, were got into the stomach, and repeated at intervals, until the pulse acquired a steady beat, and the surface its natural warmth. Its effect was immediate, and as salutary as could be desired. In diminished quantities the cordial was occasionally administered during his convalescence, which was from this time uninterrupted."

The state of direct irritation is, in the opinion of Mr. Travers, often produced by loss of blood. A hæmorrhage which does not prove fatal, yet sometimes leaves the patient too exhausted to sustain the shock of an operation. In lacerated or gun-shot wounds the hæmorrhage is frequently so great as to leave it in doubt whether the patient could survive an operation. Grainge, the constable of Henley, who was shot by Mr. Conolly, was in such an alarming state of exhaustion, from loss of blood, that amputation was deferred. It was performed after he had somewhat revived, but he lived only a few hours.

"A stout middle-aged gentleman was cut for a deep fistula, and some hours afterwards bled from the wound, to the extent, it was conjectured, of two pints or more. On the fifth day following the operation, the nates, scrotum, and top of the thigh on the same side, were attacked with acute erisypelas, which threw up phlyctenous vesications, and ran rapidly into gangrene. To this he speedily fell a victim, in spite of every effort to support him by diet and medicine."

With regard to poisons, whether animal, vegetable, or mine-

ral, they for the most part produce symptoms of direct irritation, by exerting a deleterious influence on the brain. Amongst these, wounds arising from dissection form an important class. It has been supposed that the pernicious effects of wounds from dissection were solely owing to the irritable state of the constitution of the student, from impure air, the want of exercise, and the like; and that there was no such thing as absorption of putrid matter. Mr. Travers, although he admits in its full force the influence of an irritable state of constitution upon wounds, yet remarks that in some cases the development and progress of symptoms where poison has been thus absorbed in a healthy constitution, has been very rapidly fatal. The rapid progress of such symptoms is illustrated by the following case:—

"Mr. Elcock, student of anatomy, slightly punctured his finger in opening the body of an hospital patient, recently dead, about twelve o'clock at noon, and in the evening of the same day (Monday) finding the wound painful, showed it to Mr. Cooper, after, his surgical lecture, by whom he was referred to Dr. Haighton, in whose house Mr. Elcock at that time resided. He applied a poultice to the finger, and took some active aperient medicine. During the night the pain increased to extremity, and symptoms of high constitutional irritation presented themselves on the ensuing morning. No trace of inflammation, however, was apparent, beyond a slight redness of the spot at which the wound had been inflicted, which was a mere puncture. In the evening he was visited by Dr. Babington, in conjunction with Dr. Haighton and Mr. Cooper. Still no local change was to be discovered, but the nervous system was agitated in a most violent and alarming degree, the symptoms nearly resembling the universal excitation of hydrophobia; and in this state he expired at three o'clock on Wednesday morning, within the short period of forty hours from the injury."

The operation of the various species of poisons on the system is discussed at considerable length, and amply exemplified by numerous cases. In the concluding part of the volume, he presents to us his views regarding the reciprocal relation of the vital functions; also on states of prostration, whether attended with or without reaction; and on the nature of the irritation produced in the constitution by injuries, operations, inflammation, and poisons. The information communicated on all these points, and throughout the volume, is valuable, and renders the book highly worthy of a place in the library both of the surgeon and physician.

ART. VII.—*Traité de l'Opération de la Taille, ou Mémoires Anatomiques et Chirurgicaux, sur les differentes méthodes employées pour pratiquer cette operation.* Par ANT. SCARPA, *Traduit de l'Italien, par* E. P. OLLIVIER, *D'Angers D. M. P. avec des additions et un Mémoire du traducteur sur la taille bilaterale contenant l'exposé des diverses recherches faites sur cette nouvelle methode et les modifications que Beclard y avait apportées; et plusieurs dessins, dans lesquels il avait fait representer des details anatomiques importans a connaître dans l'execution de ce procédé opératoire.* 1 Vol. in 8vo. avec 7 pl. Paris, 1826.

Our readers are aware that Surgery owes to Scarpa a series of memoirs on Lithotomy. They appeared at various periods, some of them several years back, others more recently. He lately retouched them, and reprinted them, along with other papers, in an elegant work entitled *Opuscoli di Chirurgia,* in two folio volumes, with superb plates. It was the intention of the late celebrated Beclard to have translated them into French, and to have subjoined a Memoir, by himself, on the Transverse or Bilateral operation, which has recently excited so much attention among French surgeons. In this task he was considerably advanced, when an untimely death arrested his labours. His design has been completed by M. Ollivier in the volume before us.

Several of Scarpa's Memoirs being no longer new, do not claim an extended notice. The first of the series, on the lateral operation, and the cutting gorget of Hawkins, was translated into English some years ago by Biggs. It explains his peculiar method of performing the internal incision; a method which we may conceive was no small favourite when we find the modest Scarpa declaring that he regards it as the highest possible degree of perfection of which the lateral operation is capable. The peculiarity of this method consists in dividing the side of the prostate gland along its whole extent, from the summit to the base, leaving about two lines of the lower or outer margin of the base uncut. By the proper inclination of the blade of Hawkins's gorget, which he had modified with much care for the purpose, this incision is accomplished in such a manner, that, whilst it divides the whole length of the gland and the orifice of the bladder, the neck of the bladder and the said portion of the gland are left untouched. The prostate gland is

thus divided to the depth of four or five lines throughout; as much more space is obtained by the spontaneous or natural dilatation of the neck of the bladder, making together an opening of ten or twelve lines in diameter. But Scarpa calculates the average diameter of a calculus at sixteen lines, to which must be added the size of the blades of the forceps; so that eight lines more are required: these must be obtained by dilating gradually the base of the prostate and the orifice of the bladder. This dilatation, says Scarpa, is performed slowly and gradually; it does not tear the parts, because the undivided portion of the prostate offers greater resistance than the orifice of the bladder, which latter is highly extensible, as well as elastic. The chief object of thus modifying the incision is to prevent the infiltration of urine, which Scarpa asserts is the consequence of cutting into the body of the bladder. It also affords complete protection to the rectum and pudic artery. Although Scarpa's operation has been successfully practised on a considerable scale in Italy, it has received very little notice, and still less encouragement in England. Mr. Samuel Cooper. of London, first took up the gauntlet against the Professor of Pavia. He published in the Medico-Chirurgical Transactions, and afterwards in his Surgical Dictionary, some very spirited strictures on Scarpa's views, condemning the principles on which his operation was founded, and advocating the necessity of a liberal incision of the neck of the bladder. This attack drew from Scarpa a very warm reply, which constitutes the second Memoir of the series. Into the merits of the controversy we shall not enter farther than to say, that although Scarpa has pointed out several misapprehensions on the part of Mr. Cooper, particularly regarding the minuter details of his method, he has not, in our opinion, succeeded in obviating several cogent objections which affect the principle of his mode of operation.

The third Memoir relates to the hypogastric, or high operation, which Scarpa regards as next in point of excellence to the lateral, and as that which should be resorted to when the size of the stone is so great as to preclude its successful removal by the perinæum. He conceives that its danger has been greatly exaggerated; and in mentioning the case of a female, on whom he performed it successfully in 1808, throws out a hint of its being more generally applicable to females than has hitherto been thought.

The next part of the volume consists of a series of Memoirs by Scarpa on the recto-vesical operation. Our readers are aware that the plan of cutting into the bladder from the rectum, was originally proposed several years ago by M. Sanson, surgeon to

the Hôtel Dieu of Paris. It has since been adopted, with certain modifications, by Vacca Berlinghieri, the late distinguished professor of surgery in the University of Pisa, who, in a succession of memoirs, endeavoured to establish its superiority as a general operation over all its predecessors. Scarpa came forward as the opponent of Vacca. In the different memoirs he has published in the course of this controversy, we find a very masterly and minute examination of the pretended advantages of the new operation. He compares its eligibility, under every point of view, with that of the lateral and hypogastric operations: and, after a very elaborate scrutiny, decides that it is the most imperfect of the three. The risk of wounding the peritoneum, which Scarpa has shown to be by no means so chimerical as has been represented; the certain division of at least one of the vasa deferentia; and, above all, the supervention of recto-vesical fistula, and permanent incontinence of fæces, are the positive objections on which he principally insists.

Through the whole of these Memoirs there runs so rich a vein of anatomical detail, the author's reasonings are so constantly built on anatomical grounds, and his anatomical views are so strikingly precise and lucid, that we cannot too strongly recommend their perusal to those who would acquire accurate notions of the mutual relations of the parts interested in lithotomy. It is in fact as lessons in surgical anatomy that these memoirs are eminently valuable, and as such, will be, in many respects, of more service to the advanced student than the study of the best text-books, expressly designed for this species of instruction.

It is unnecessary for us to enter here on the concluding Memoir, as the reader will find an account of the transverse operation in our Quarterly History.

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* The only essential difference in the recto-vesical operation, as practised by Sanson and by Vacca, consists in the *extent* of the incisions of the bladder and rectum. After dividing the sphincter of the anus, Sanson again thrusts the point of his bistoury through the anterior wall of the rectum, so as to penetrate the lower part of the body of the bladder (bas-fond) in the middle of the space, between the openings of the ureters. He next withdraws his bistoury along the groove of the staff, cutting, as he proceeds, outwards, first the body, next the neck and orifice of the bladder, and lastly the prostate gland. On the other hand, Vacca, after dividing the sphincter, directs his finger into the bottom of the incision, feels for the groove of the staff through the membranous part of the urethra; and then, without any additional division of the rectum, penetrates the urethra immediately anterior to the gland, runs his knife backwards so as to divide, in the median line, the gland, orifice, and a small part of the neck, being careful not to prolong his incision into the body of the bladder.

ART. VIII.—*An Account of the Morbid Appearances exhibited on Dissection in various Disorders of the Brain, with Pathological Observations; to which a Comparison of the Symptoms, with the Morbid Changes, has given rise.* By THOMAS MILLS, M.D. 8vo. pp. 240. Dublin, 1826.

The object of this work, which is described in the title, is followed out with industry and ability. A series of cases are detailed, comprising an account of the symptoms, the treatment, and the morbid appearances on dissection of patients who had laboured under hydrocephalus, cephalic fever, apoplexy, and epilepsy. The main object of the author is to shew that these diseases, although regarded as distinct, are yet closely allied, both as regards the character of their symptoms, the course which they run, and the morbid alteration of structure exhibited on dissection. So closely, indeed, are they found to resemble each other in these respects, as to lead to the belief, "that morbid actions which produce effects so alike, cannot in their nature be dissimilar;" nay, that the maladies just enumerated may be varieties of the same disease, and that the morbid action, which in the brain of a child produces hydrocephalus, might, in an adult, produce epilepsy, apoplexy, or even mania. The following case we select out of a considerable number of which the volume consists, by which the reader will be able to form a general idea of the rest.

"Mrs. K———, aged 34, Abbey-street, a schoolmistress of extensive information, sedentary habits, and of a melancholic temperament—after exposure to cold and wet, was seized with chilliness, headache, and pains in the back and limbs; to these succeeded languor, vertigo, thirst, loss of appetite and rest, foulness of the tongue, retching, and pains in the umbilical region, augmented by pressure. This lady is in her seventh month of pregnancy: about a fortnight ago her foot slipped, when she fell, and received a hurt in the abdomen.

"Four years ago, immediately after a premature accouchement, caused by the sudden death of two of her children, she laboured under mania, which assumed a religious character, and lasted three months. During the continuance of the maniacal attack, and frequently since, she has complained of headache, vertigo, confusion of ideas, and occasionally of a sense of weight and coldness in the occiput and vertex. It is remarkable, that while pregnant her mind is more composed and vigorous than after her accouchement, or at any other period.

"Ten ounces of blood have been taken from the arm, and aperients have been administered by the direction of Mr. Johnston.

"Dec. 18th. Restlessness; maniacal delirium; pulse 116; skin hot; tongue yellowish and furred; pain and uneasy feelings in the head; bowels confined; urine high-coloured; suffusion and rolling of the eyes; frequent retching; pains in the umbilical region increased by pressure.

Hirud. xx. Regioni Umbil.
R. Submur. Hyd.
P. Jalapæ ā ā gr. x. m. Sum. statim.

"Dec. 19th. Little effect from the powder; pains in the abdomen; high fever; maniacal delirium.

Fotus abdominis. En. Purg.
H. Cath. ex infuso Sennæ et Tinct. Jalapæ.

"Dec. 20th. Three dejections of a black colour; urine reddish; tongue furred; thirst; subsultus tendinum; respiration hurried; pulse 124, irregular; abdominal pains augmented by pressure.

Hirud. xx. regioni Umbil.
Repr. Pulv. ex Cal. et Jalapæ.—En. P.

Dec. 21st. Bowels obstinately costive; delirium; speech inarticulate; abdomen highly sensible to the touch; rolling of the eyes.

Fotus abdominis.
Repr. P. Cath. et En. Purg.

"Dec. 22d. Prostration of strength; involuntary dejections; hiccup; skin cool; pulse 120, weak and intermitting.

Vesic. inter Scap.
Mist. Camphor.
H. Anodyn.

"Dec. 23d. Difficult deglutition; oppressed respiration.

"Died in the evening of the 24th December.

"*Dissection.*—There is a considerable quantity of serous effusion between the arachnoid membrane and pia mater. This effusion is pretty general over the surface of the brain. The arachnoid membrane is opaque and thickened, especially about the occiput.

"The surface of the brain presents a high degree of venous turgescence.

"There is about a drachm of a watery fluid in the ventricles; there is an ounce at the base of the cranium, much, if not the entire of which seems to have descended from between the membranes.

"The substance of the brain is preternaturally firm.

"The peritoneal covering of the parietes of the abdomen is very vascular—the same covering of the stomach and of a great portion of the small intestines is thickened and highly vascular. The lining membrane of the stomach and intestines is in a state perfectly natural. The colon is considerably distended with flatus.

"Liver:—the great lobe, in some parts, appears to be excessively vascular, in others, natural.

"Gall-bladder distended with greenish bile.

"In the superior portion of both lungs, under the clavicles, are

found three or four small tubercles, which, externally, are of a blueish hue, and when cut into, are found to contain a cheesy matter. With this exception the lungs are healthy.

"The surface of the heart appears covered with a layer of yellowish fat.

"The uterus exhibits a natural appearance, and is about half an inch thick.

"There is nothing remarkable in the appearance of the fœtus.

"*Observations.*—In this interesting case, there existed for years symptoms indicative of a disturbance of the functions of the brain; these were headaches, vertigo, a sense of weight, coldness, and fulness of the head, &c. The understanding was also disturbed, and for three months the subject of this Memoir was placed in a retreat, labouring under a religious melancholy. These symptoms, from their long continuance and obstinacy, would induce us to apprehend, not merely a functional, but an organic derangement of the brain; accordingly after death, the arachnoid membrane was found opaque and thickened, and a considerable quantity of serous effusion was discovered between this membrane and the pia mater. The substance of the brain was preternaturally firm, and a watery fluid was found in large quantity at the base of the cranium; these changes had been going on for a considerable length of time, and when aggravated by a new excitement of the vessels, a state of the brain was produced incompatible with life.

"This patient received a hurt in the abdomen before her last illness, which occasioned peritoneal inflammation; this was extended to the external coats of the stomach and small intestines, and may serve to account for the pain and for other symptoms referrible to those organs.

"From these and other cases and dissections, and from having attended cases of a similar nature where recovery took place, I am led to conclude, that mania and fever may pass reciprocally one into the other, and may be induced by the same exciting causes."

We shall also subjoin the description of the appearances on dissection in another case, which confirms still more the views entertained by Mr. Mills, by some of the Continental physicians, and now spreading pretty generally in our own country.

"On removing the dura mater, the surface of the brain exhibited marks of arterial excitement and venous congestion. Between the arachnoid membrane and pia mater a serous fluid was perceptible. On cutting through the substance of the cerebrum, it was found dotted with numerous red points. The lateral ventricles were enlarged and contained an ounce and a half of a transparent watery fluid. Plexus choroides pale. The cerebellum was highly vascular, a small portion of its inferior surface was covered with dark-coloured coagulated blood. At the base of the cranium, and in the theca spinalis there were found nearly two ounces of a watery fluid.

"The morbid appearances, in this instance, were indicative of inflammation of the membranes and substance of the brain, and of con-

gestion of its veins. The watery effusion found in the cavities was the consequence of such inflammation.

"This lady laboured under the common symptoms of brain or typhus fever, occasioned by cold and anxiety of mind. It commenced with chilliness, headache, prostration of strength, loss of appetite, and pain of the back; and was followed by thirst, heat of skin, vertigo, tinnitus aurium, restlessness, delirium, foulness of the tongue, involuntary dejections, and a pulse varying in strength, frequency, and regularity.

"Four days before death fever abated, and mania supervened, and during this period she rejected almost every kind of drink; indeed the horror with which she sometimes looked on water, or any other liquid, would seem to countenance the idea, that she laboured under a species of hydrophobia.

"Death took place on the fourteenth day of the attack, preceded by a fluttering pulse, collapsed features, oppressed respiration, and difficult deglutition. Here the disease consisted in inflammation of the brain, and the debility was indirectly the consequence of this inflammation.

"The only remedies, therefore, that could have cured the disease were blood-letting, general and local, fully employed at the onset of the attack, (I say at the onset, because the attack was violent,) aided by emetico-aperients, mercury, blisters, &c. These remedies, indeed, were resorted to, but at too late a period, for effusion had taken place before medical advice was called for.

"This case, like the former, tends to show how intimate the connexion is between cephalic fever, inflammation, mania, and hydrocephalus."

There is no doubt but that the mode of investigation pursued by our author, is the only one by which scientific knowledge of medicine is to be obtained. We have no doubt Mr. Mills is still following the same track, and he has our best wishes for his success. We feel very doubtful, however, with regard to the great activity of his remedial measures, in many of the cases before us, in which death quickly supervened after free depletion. We are aware of the difficulty in which our profession are frequently placed, in cases in which the patient must apparently sink under the violence of the disease if unchecked, and where it is as probable he may sink under active measures. The latter, however, seem to afford the only chance of escape; and as the late Dr. Gregory remarked, in a consultation on the case of a patient in a situation similar to what we have supposed, "If he is dying, he may as well die by bleeding as any other way." The patient was bled and recovered. Yet we are sorry to observe the result has not been generally favourable in those cases given by Mr. Mills, where bleeding appears to have been pushed to its utmost limit, when, however, too late in the disease to save. The only way in which we can be delivered from the dilemma is by investigation, pursued in the very same mode

as that adopted by our author; and we recommend it to him to make the question—when bleeding in advanced stages of acute disease may or may not be used, and to what extent it may be employed—a still more important feature in his future inquiries.

ART. IX.—*The Morbid Anatomy of the Human Brain, being Illustrations of the most frequent and important Organic Diseases to which that viscus is subject.* By ROBERT HOOPER, M.D. 4to. 15 pl. pp. 36. London, 1826. Longman and Co.

This work consists of a fasciculus of coloured engravings, representing the morbid changes of structure which are most frequently met with in the brain and its membranes. The plates are accompanied by explanatory letter-press, and are distributed according to an arrangement, which the author has exposed in an introduction. Dr. Hooper informs us that this publication is the first part of a more extensive undertaking, which is intended to comprise the morbid anatomy of all the viscera in succession. This first portion of the work possesses very superior merits. The drawings, all of which are taken from nature, have been executed with great skill, and bear every mark of being faithful imitations. The engravings, by Wedgewood and Stuart, are superior specimens of the art; whilst the colouring, on which, in representations of disease, so much depends, has evidently been a peculiar object of attention. The specimens of disease represented amount to thirty-two, and are judiciously selected and scientifically arranged.

The following is the series of diseased appearances represented by the different plates:—

1st. Inflammation of the internal surface of the dura mater, exhibiting a state of morbid vascularity.—2. Secretion of albumen formed into a very vascular and adventitious membrane.—3. Secretion of albumen between the tunica arachnoides and pia mater, in patches, resembling pus, on the upper surface of both hemispheres.—4. Secretion of albumen between the same membranes on the under surface of the brain.—5. Abscess of the lateral sinuses of the dura mater.—ossifications of the dura mater.—6. Tubercles of the dura mater—excrescential tumour of the dura mater.—7. A tumour of the dura mater which has very much the character of *cephaloma*.

II. DISEASES OF THE SUBSTANCE OF THE BRAIN.

8. *Inflammation*, which has produced a deposition of albumen into the medullary substance, and an alteration of structure more like to abscess than to any thing else.—9. Several kinds of *abscesses*.—10. *Hematoma*

in the left hemisphere of the brain.—11. A conversion of the whole of the left lobe of the cerebellum into a mass of *scrofulous* structure.—12. *Tubercles*, the black called *melanoma;* the white called scrofulous; and the tubercle of the choroid plexus—*vesicles* of the choroid plexus.—13. Encysted tumour in the right hemisphere of the brain.—14. Three large *vesicles* in the left hemisphere of the brain.—15. *Extravasation* of *blood* into the medullary substance of the brain, and the left lateral ventricle.

The following is the author's arrangement and preliminary observations on the structural diseases of the brain and membranes:—

"The diseased appearances which the brain and its membranes, and the internal surface of the cranium afford, are Inflammation and its effects, Tumours, diseased structures, and unnatural appearances without tumefaction, Morbid collections of fluids secreted between the membranes and in the cavities, and extravasated fluids.

Inflammation exhibits an increase of vascularity; the secretion of a fluid mostly albuminous on the surface of membranes; a morbid thickening; adventitious membranes; an adhesion of membranes; abscess; ulceration; gangrene.

The *Tumours* consist either of an organized substance varied in its appearance, according to the nature of the disease, or they are formed of a membraneous cyst, which mostly contains a fluid. The *Solid* tumours of the brain are generally circumscribed, and so defined, that the naked eye can see immediately where the disease terminates. These are mostly *fungous* or *excrescential.* Some, however, are so blended with the surrounding cerebral substance, being lost imperceptibly in it, that their limits cannot easily be traced. In their colour, form, and feel, they vary very much. The most usual appearance is one which comes near to that of the brain, but some are brown, others yellowish, and some black. The greater part are soft, and easily broken down between the fingers into a pulpy mass, leaving scarcely any trace of organization. Others are of the consistence of brain; some much firmer, others of a cartilaginous or bony hardness, and the structure of some is peculiar.

They are either

1. *Aneurisma.* The basilary and internal carotid arteries, or their branches have been found aneurismal.

2. *Cephaloma*, an organized fungous vascular substance, mostly circumscribed; growing from a viscus, muscle, membrane, or nerve, and resembling the brain in appearance and feel. A cream-like fluid is easily squeezed from the outer surface. It is much less vascular than hæmatoma, and differs from it in appearance. Sometimes the natural structure of the organ is wholly destroyed, and converted into this disease.

3. *Chondroma.* An organized, often excrescential, substance, of the structure and hardness of cartilage. Tumours of this kind in the substance of the brain, though mentioned by good authorities, have not yet occurred to me; but I have often seen the glands of Pacchioni of this

structure; cartilaginous tumours in the dura mater are not uncommon.

4. *Haematoma.* An organized, fungous, vascular substance, growing from a viscus, muscle, membrane, or nerve; and resembling when cut, coagulated blood, with portions of a firmer texture, like the albuminous part of blood when solid. Sometimes the natural structure of the organ is wholly destroyed, and then the viscus is enlarged, and converted into this disease. In some instances it expands from a small peduncle, but it mostly has a broad base.

5. *Hygroma.* A tumour formed by a collection of fluid, either serous, albuminous, or puriform, in the cellular membrane, or in a cyst. It is not uncommon to have a portion of the brain converted into a mass of cells, filled with a serous fluid. The pineal gland and the tunica arachnoides, especially about the medulla oblongata, occasionally present a circumscribed tumour, which comes under this head, and hygroma often occurs as an encysted tumour in the substance of the brain.

6. *Melanoma.* A soft, organized, fungous substance, of a black colour, mostly circumscribed and tubercular. The cut surface is smooth, of the colour of indian ink, and very moderate pressure separates a fluid like the pigmentum nigrum of the eye. No part of the human body, in a healthy state, bears any resemblance to this diseased structure except the gland-like bodies about the bifurcation of the trachea, which are occasionally very black, but very different in texture; it is therefore named from its colour, by which it is immediately known.

7. *Ostema.* An organized, bony or ivory-like tumour, found in the viscera and soft parts, consisting principally of phosphate of lime and a little animal matter, mostly circumscribed and excrescential, but sometimes tubercular. This genus includes those morbid secretions and collections of phosphate and carbonate of lime, lithate of soda, and similar hard depositions usually called calcareous.

There is a diseased appearance that also comes under this head, which consists of a gritty calcareous, deposition. It occurs in the very substance of the brain, and in the pineal gland, and consists principally of phosphate of lime and animal matter. These depositions are not larger than small particles of saw dust, are mostly of an irregular form and spicular, and when minutely examined with a lens, each portion is seen imbedded in the medullary substance, and attached to a blood vessel. I have seen a cerebellum full of these, and the whole external surface studded with small spicular and bony particlesimmediately under the pia mater covering.

8. *Scrofula.* The structure of the part is converted into one which answers to the definition of this disease, and which is sometimes circumscribed or tubercular, but more frequently not so. Encysted scrofulous tumours are met with.

"The encysted tumours are often seen adhering to the choroid plexus, resembling animal hydatids. These are mostly very small, some are found imbedded in the medullary substance of the brain, from which in some cases they extend into the ventricles. These sometimes acquire a great size, and are generally so closely connected with the surrounding medullary substance as to require much nicety to pare it away, in order to expose the cyst, and in doing this many vessels are

torn through, which nourish the cyst, and secrete its contents. The cyst is formed of one membrane, which cannot be separated into laminæ. It is often of the thickness and texture of the dura mater, but in some remarkably thin. Those which are thick are very firm and opaque; the thinner are more delicate, beautifully transparent, and have very much the appearance of animal hydatids. The vascularity of the transparent cysts is seen by vessels carrying red blood ramifying on their surface; but the vascularity of the opaque cysts is not discernible to the naked eye.

The contents of these encysted tumours are either a serous fluid, like that of the serum of the blood, or an albuminous fluid, or pus."

"THE ALTERATIONS OF STRUCTURE AND UNNATURAL APPEARANCES WITHOUT TUMEFACTION, ARE

1. "*Flaccidity.* This is often found to a great extent, and is perhaps owing to an excess of serosity for, there is with it diminished elasticity. This condition of the brain often exists without a corresponding flaccidity of other parts of the body.

"2. *Firmness.* With a state of morbid firmness, there is in most instances a dryness of the brain.

"3. *Pulpiness of a Part.*—Mostly in the medullary substance.

"4. *Change of Colour.*—A part of the brain is sometimes found to be of an unnatural colour, without any other morbid appearance. The membranes are occasionally tinged with yellow in jaundice; but I have never seen the substance of the brain tinged with bile more than once; the subject was an elderly lady who died under the black jaundice.

"COLLECTIONS OF A FLUID BETWEEN THE MEMBRANES AND IN THE NATURAL CAVITIES.—*Serous.*—1. Between the dura mater and tunica arachnoides.—2. Between the tunica arachnoides and pia mater.—3. In the lateral ventricles.—4. In the third ventricle.—5. In the fourth ventricle.—6. In the fifth ventricle, or cavity between the laminæ of the septum lucidum, in which I have seen two drachms of a serous fluid, and no dropsical appearance in any other part.

Purulent.—I have found two ounces of a fluid not coagulable, having every appearance of pus, between the dura mater and tunica arachnoides of the left hemisphere, and no vestige of inflammation of the membranes.

Extravasated Blood is frequently found within the cranium, producing unnatural appearances, both between the membranes, and in the substance of the brain; which is by far the most common, and also in the ventricles. The colour, and its not being organized, though perhaps solid, show immediately the nature of the mass.

"When recently extravasated, it is like a coagulum of blood in other parts. When it has been some time out of the vessels, it is more solid, and somewhat fleshy: and such extravasations as are of longer duration, have been found surrounded by a morbidly vascular surface, from which vessels have proceeded into the coagulum.

In conclusion, we beg leave to reiterate our high opinion of the value of Dr. Hooper's work, and we trust he will not fail to prosecute an undertaking which reflects on him the highest credit.

QUARTERLY HISTORY

OF

Improvements and Discoveries

IN

MEDICAL SCIENCE.

ANATOMY.

Our anatomical section, (says one of our Contemporaries) will generally be found bare, or filled with researches running in some particular vein, and often savouring more of curiosity than of practical importance. This we say, with a certain reserve, as we are of that class who think that a physician will always be a better *practical* man for having an extensive and minute knowledge of anatomy. And as we never know from what department of knowledge useful science may receive its next illumination, we are of opinion that a physician can never know too much of the structure of the human body, even though no immediate practical application can be made of what he is studying, and he follows it only for its interest. This principle of study may almost be considered as the true distinction between an enlightened physician and the mere empiric or dogmatist.

It would obviously be unreasonable to expect real discoveries on anatomy now-a-days. Every part of the human body has been examined and scrutinized by so many inquirers of eminent merit in all ages, and almost all civilized countries, that, comparatively speaking, little remains for their modern successors to do—at least in those parts which are confessedly of practical importance. Anatomy may be termed Medical topography.—It is an old and a beaten path, that has been trodden by the Hallers, the Hunters, the Meckels, and the Bichâts; every point of it bears the impress of their zeal and their genius, and little remains to be done but to fill up a few lacunæ which have escaped their scrutiny.

Researches on Congenital Malformations.—Anatomists have of late years been engaged particularly in the investigation of the development of the body during the earlier periods of its existence, more especially of the nervous system. To this they have been mainly impelled by the impulse given to this department of inquiry, by the publication of the writings of Gall and his disciples. This again has led several persons to engage in the comparative anatomy of the brain; and finally, a new and most interesting field has been thrown open for our Continental physiologists, by the production of those anomalous existences hitherto called Monsters. These have not merely followed in sequence in the order of time—they have a direct connexion with the same department of inquiry; one has, in fact, paved the way for the other, and all conspire to elucidate one most interesting problem, viz. the laws which preside over the development of organized beings.

M. Tiedemann has published, in a late number of the German Journal of Physiology, an Essay, being the first of a series, on this subject. In order to determine the influence of the nervous system on the development of the other organic systems, he proposes to investigate the following questions:—

1. When an organ is absent, are its nerves also absent?
2. When supernumerary exist, is there a corresponding excess in the number of the nerves; or of the parts of the brain and spinal marrow?
3. What are the peculiarities of the nervous system which correspond with a sudden stop to the development of organs?
4. Is there any peculiar organization of the nervous system, and particularly of the brain and spinal marrow, which universally corresponds to an anomalous organization of the body in general, or of its individual organs; and what is that peculiar organization?"

M. Tiedemann has collected, in reply to these, a large number of cases from various authors. Of eight, preserved by himself, he has given the particulars.

Two were instances of congenital division of the soft palate, accompanied by hare lip. In these the hemispheres of the brain were entirely united anteriorly, having no mark of the usual division; the convolutions passing, uninterruptedly, from one side to the other. There was no trace of the olfactory nerves; and in place of the ethmoid bone, was found a cartilaginous mass without any foramina. The thalami were united superiorly, and the fornix was incomplete in its development in the anterior part.

The following appearances were observed in a still-born child, who had a division of the velum palati, an umbilical hernia, and

a supernumerary finger on each hand. Brain forming an entire mass without any division into hemispheres; olfactory nerves, the corpus callosum, the anterior crura of the fornix, the anterior commissure, and the pineal gland entirely wanting; the lateral ventricles formed but a single cavity, uniting in front of the thalami.

Sœmmering and Rudolphi cite analogous cases. A puppy was born without eyes, the orbits being filled by cellular substance. Two slender filaments, originating from the thalami, and the anterior pair of the tubercula quadragemina constituted the optic nerves; they passed round the crus cerebri, and terminated without any union, immediately in front of the pituitary gland. The other nerves of the organs of vision were deficient.

Malacarne, Himley and Schmidt, Orlander and Lobstein, furnish some analogous cases, besides others which are imperfectly described.

A fœtus was born with but one eye, without a nose or any other part of the olfactory organs, with a supernumerary toe on the left foot, and six fingers on each hand. In lieu of a nose, he had a tube fifteen lines in length, hanging from above one eye; the eye had four lids placed in a quadrangular manner; it was in front oblong horizontally. The brain was a single smooth mass, without hemispheres or convolutions. The olfactory nerves and ethmoid bone were wanting. The optic nerves entered the orbit without any junction. The eye was double at the posterior part.

In another case, the same external characters were found. In this there was but one eye and one optic nerve, which was formed by the union of filaments from the thalami, and both the corpora quadragemina. The brain was a single mass, without convolutions, or separation into hemispheres, and was so small, that the cerebellum, corpora quadrigemina, pineal gland, and optic thalami were uncovered posteriorly. The corpora striata, ethmoid bone, os unguis, and os turbinatum inferius were absent.

Another fœtus, examined by M. Tiedemann, presented a truly monstrous conformation. Besides its having but one eye, and the trunk hanging from above, there was a smaller trunk placed below it. There were neither lips, jaws, or mouth, except a small opening, which led to the larynx and œsophagus, and the rudiments of a tongue, two lines long, attached to the os hyoides. The nasal cavities, all the bones and muscles of the face, the masseters, and the salivary glands, were wanting. Where these organs are usually placed, there were found two well formed ears, looking from the sides of the head downwards and for-

wards; their lobes united near the perforation which was substituted for a mouth. The brain devoid, like that in the preceding case, of hemispheric division or convolutions, wanted the pituitary gland, mammillary eminences, and olfactory nerves.

Monoculi.—This mal-conformation occurs both in man and in quadrupeds—most frequently in sheep and hogs. The female seems more liable to it than the male sex. It is characterized by the entire want of the whole olfactory apparatus, including the bones, and by almost always the presence of that peculiar tube, described in the above cases, having from above the eye, and perhaps the rudiment of an external nose.

Many monsters of this class want the mouth, for which in some a small trunk is substituted. The tongue is either absent or rudimental, and the entire apparatus of mastication is wanting. In other instances, only the lower jaw and tongue are deficient. The absence of the mouth is usually the circumstance on which depends the position of the ears mentioned above.

Unusual arrangement of the Aortic Branches.—M. Clement has lately described a case in which the brachio-cephalic artery (arteria innominata) was absent; the carotids were confounded at their origin. The right originated below and behind the left subclavian, crossing over with an inclination upwards, behind the left nervus vagus, left subclavian and carotid arteries, œsophagus and trachea. It was immediately in contact with the spine and its ligaments, and with the longus colli muscle. The previous history of the case was not known.

Regeneration of divided Arteries.—Professor Mayer has lately made some researches on the effects of ligatures on arteries. He has found that the trunk of the vessel retains its natural size up to the point at which the division has been effected, immediately below which lateral branches proceed outwards and upwards to join the continuation of the trunk superiorly. These results, it will be recollected, correspond exactly to those detailed by Doctor Parry, in the last chapter of his excellent Essay on the Pulse.

Discovery of two adventitious Joints in the Human vertebral column.—Professor Mayer, of Bonn, has discovered two supernumerary species of articulation that are sometimes found between the vertebræ of adults. They are never met with in the young, and must therefore be formed in mature age from the operation of causes which do not exist in the earlier periods of life. The first, and most common kind of these articulations is formed between the spinous processes of the lumbar vertebræ. The lower surface of the spinous process of one vertebra becomes articulated by means of a small articular condyle, to the upper

surface of the one immediately beneath it, which is hollowed out into a corresponding glenoid cavity. This articulation is most perfect between the third and fourth lumbar vertebræ, where it is surrounded by a distinct synovial capsule. Professor Mayer has given it the name of interspinous diarthrosis of the lumbar vertebræ.

The second species of articulation described by Professor Mayer, which is much less than the other, occurs from the ninth dorsal to the second lumbar. It is double, being situated on each side of the vertebræ. Its condylar or projecting surfaces, are formed by the two small eminences observable in the infererior surface of each of these vertebræ at the points where the roots of the spinous process bifurcates to join the inferior oblique processes, and the hollow articulating surfaces are formed in the upper surface of the subjacent vertebræ by those corresponding depressions which are seen inferiorly and internally to each of the superior oblique processes. Any one who chooses to examine the skeleton, or who recollects that these occasional joints are formed by those points of the vertebral processes, which, in consequence of their mutual pressure and friction, present corresponding eminences and depressions in the natural state, can have no difficulty in comprehending their origin. The law by which these articulations are formed, is manifestly analogous to that by which false joints are created in other parts of the body. If the fact stated by Professor Mayer, and rendered probable by analogy, of the deposition of a synovial membrane be established, it renders the discovery curious in a physiological point of view, although otherwise it does not appear of much importance.

Congenital Malformation of the investing Membrane of the Heart.—Numerous observations have been detailed respecting the absence of the pericardium, but as the majority of the cases were observed by the older authors, at a period when the diseases of the heart and its envelopes were but little understood, it may be presumed that an adhesion of the pericardium to the heart had often been confounded with the total absence of that membrane. Indeed Haller supposed the latter to be the fact in almost every instance; but the following interesting case determines at least the possibility of its occurrence :—

" A young man, 28 years of age, tall, and thin, habitually in the enjoyment of good health, and apparently labouring under no derangement of the respiratory or circulatory functions, was admitted 3d December, 1825, into the Hotel Dieu for a severe internal inflammation The disease, which presented all the characters of the most acute dysentery, proceeded rapidly, and on the third day after his admission proved fatal. On examination the usual pathological lesions were ob-

served, such as thickening of the walls of the intestines, ulceration of the mucous membrane, and the formation of a false membrane on its internal surface; but the most remarkable fact was the absence of the pericardium. On examining carefully the several parts, the following peculiarities presented themselves:—

"First—The heart wanting its external fibro-serous envelope, was free and floating under the left lung, and appeared to be kept in its situation by two cords, about two inches long, which passed from the left side of the summit of the heart, and seemed to terminate at the circumference of the diaphragm, near its insertion at the base of the thorax.

"Secondly—The mediastinum was formed but of a single lamina, belonging to the right pleura.

"Thirdly—On the left side of the septum there appeared a fibrous bag which lost itself above upon the roots of the heart, and terminated abruptly below, without forming any adhesion to the diaphragm. This capsule appeared to be the rudiment of a pericardium, upon which no doubt could exist from its fibrous nature, its situation, the facility with which it was separated from the left pleura, and its length, which corresponded to that of the heart. The free border of the capsule was smooth, and resembled the border of an opening in an aponeurosis on the edge of one of the valves of the vessels. Above there appeared a thin cylindrical fibrous filament running from the anterior to the posterior border of the capsule, and passing over the base of the heart, without adhering to it. This was considered as a vestige of pericardium.

"Fourthly—The serous membrane of the heart was entirely wanting and, instead of it, the pleura of the left lung sent a prolongation from the point where it is in immediate connexion with the heart to envelope this latter organ. The heart then had no proper serous covering, but was manifestly indebted for one to the left pleura. On the superior border of the left ventricle, the pleura, in setting out from the lung upon the heart, formed several folds, which presented the appearance of accidental formation, but which in reality belonged to the pleura. But the fibrous coat of the pericardium was altogether absent, with the exception of the simple oval lamina connected with the pleura and the loose filiform band adhering by its two ends. Between the laminæ of pleura which formed the mediastinum and the fibrous lamina which constituted the rudiment of pericardium the right phrenic nerve was found, whilst the left ran along the free and anterior border of the fibrous capsule, which held the place of pericardium.

"The supposed adhesion of the summit of the heart to the diaphragm by the two small bands above described, constituted the only apparatus, by which the point of the heart was kept *in situ*, and its movements regulated."

As we have but one or two well authenticated instances of the heart, in its normal state, wanting its investments, the present case becomes extremely interesting, for several modern patholo-

gists have attributed, what some have supposed to be a total absence of pericardium, to simple adhesion, consequent upon inflammation. The present case, however, cannot be supposed to be an adhesion of the pericardium to the heart, for in addition to the parts having been submitted to the examination of several anatomists, the fact of a rudiment of the pericardium existing affords a demonstrative proof that it was arrested in its development, and that this membrane is as liable to deviation as other parts of the body. The case of the young student who died in syncope, related by Reald Columbus, where the heart wanted a pericardium; that of the dropsical woman, described by Bartholini; the case related by Tulpius of a male adult, who, from his infancy, had an intermittent pulse, with violent palpitations of the heart, where the pericardium was found wanting; and similar instances detailed by Peyer, Lancisi, Brunner, Hoyer, and Lieutaud, were all considered by Haller as examples of adhesion of the pericardium to the heart.

Baillie has given a case, between which and the present there is a striking analogy. In both instances the phrenic nerve was displaced, and ran on the middle line, uncovered by serous membrane; this circumstance, therefore, in the position of the left phrenic nerve, may be considered a distinguishing character between absence of the pericardium and its simple adhesion to the heart. Had the phrenic nerve preserved its ordinary situation, and been connected with either heart or left lung, it would have been constantly agitated by the movements of one of these organs; but in the present case, running along the single lamina of the mediastinum, it described, in order to arrive in this situation, a curve analogous in extent to that which it generally describes to wind round the left side of the heart, and was thus placed in a situation where neither the motion of the heart or the lungs could affect it, by which movements the action of the heart would have been materially affected. In Baillie's case, as well as the present, the pleura furnished to the heart a prolongation which enclosed it, but there was no fold to regulate its movements. This absence of the fibrous pericardium, where the situation and conformation of the heart were natural, should not be confounded with malformations of the heart in reference to its position and organization, for, under such circumstances, there is frequently an absence of the pericardium. Walter, in his "Museum Anatomicum," reports a case of absence of pericardium. Opening the left cavity of the thorax of a man thirty years of age, the pericardium was found not to exist, and the pleura afforded an envelope to the heart and the left lung.

As the pericardium existing in part, proves that this membrane

proceeds in its development from the sides towards the central line of the body, is the present anomaly to be attributed to any interruption in its development? or can we compare this state to that of certain animals which are supposed to want a pericardium? Probably in no animal does the heart want its proper serous membrane, and in those cases in which the pericardium is supposed not to exist, the fibrous coat alone is wanting.

During the life of this individual the circulation did not appear to have been disturbed; it should be recollected, however, that the base of the heart was retained in its situation by the vessels which issued from it, and its movements were limited to the two bands which were attached to its apex.

Our readers will recollect that Dr. Barry has advanced some peculiar opinions concerning the use of the pericardium; he conceives it to be so important a functionary in carrying on the circulation, that it cannot be dispensed with; that, in fact, it is one of the few organs which are never wanting; he imagines that it assists in producing that tendency to a vacuum in the venous reservoirs near the heart, so indispensably necessary to the maintenance of the circulation. When advancing this hypothesis the Doctor could not have been aware of those cases in which the pericardium is deficient or wanting.

TIEDEMANN *on the Brain of the Ourang-outang compared with that of Man.*—After noticing the various false notions that have been propagated respecting the brain of this animal, M. Tiedemann presents us with an accurate description of the brain of one of the Asiatic tribe, which he subjected to a minute examination. The following are the points in which he found it to differ from that of the human species:—

"1st. The brain is in proportion, smaller, shorter, and shallower than that of man, the posterior lobes of the cerebrum covering only part of the cerebellum.

"2d. The mass of the two hemispheres of the brain bears a smaller proportion to the spinal marrow, to the *corpora pyramidalia*, to the *tubercula quadrigemina*, to the *thalami optici*, to the *corpora striata*, and to the cerebellum, than in man.

"In the ourang-outang the transverse diameter of the spinal chord, taken immediately posterior to the *corpora pyramidalia*, is to the greatest transverse diameter of the cerebrum as 1 : 9, whereas the proportion in man is as 1 : 10. In the ourang-outang the breadth of the pyramidal portion of the medulla oblongata is to that of the brain as 1:9½; in man as 1:13. In this ape the transverse diameter of the *corpora olivaria*, compared to that of the brain, is as 1 : 9; in man as 1 : 18.

"3d. In the ourang-outang the brain bears a smaller proportion to the nerves than in man.

"4th. The brain of the ourang-outang presents considerably fewer anfractuosities and convolutions than the human brain."

On the other hand M. Tiedemann has enumerated a considerable number of points in which the brain of the ourang-outang differs from that of the other species of apes, and it is remarkable that in every one of these respects it approaches to the human brain.

Recent Observations on the Blood-vessels of the Spleen.—M. Andral, jun., in some late investigations, has ascertained that in the horse the blood passes immediately from the branches of the splenic artery into the spongy substance of the spleen by cribriform openings in the coats of the vessels. The blood is returned in a similar manner by the veins, which are also perforated so as to admit the direct introduction of the fluid through their coats. Several anatomical preparations have been made by M. Andral, which prove and illustrate this peculiarity of structure which serves to explain some singular facts in physiology. M. Segalas explains, on this principle, the extraordinary change in bulk which the spleen suddenly experiences during the temporary tetanus produced by nux vomica. This change, which is to the extent of two inches, is readily produced by the influence of the poison on respiration, by the state of which the venous circulation is governed.

PHYSIOLOGY.

Substitution of Final for Physical Causes, a frequent source of Error in Physiological Induction.—New views are as valuable as new facts—nay, we would say more valuable, inasmuch as the latter are generally the fruit merely of observation, or of moderate ingenuity, whereas the former require powers of mind of a much higher character. It is therefore, with great pleasure we lay before our readers the following acute and judicious reflections, which we find in an *Introductory Lecture*, lately published by Dr. Roget*. As lectures of this kind, from their rarely containing anything beyond common-place declamation, are generally little regarded, and seldom referred to—we are the more inclined to give this brilliant exception additional publicity.

After a very luminous exposition of the essential features of distinction between organized life and inorganic matter, and the

* An Introductory Lecture on Human and Comparative Physiology. By Peter M. Roget, M.D., F.R.S.

consequent dissimilarity of the modes of investigation applicable to each, Dr. Roget alludes to the principle of Intention—the adaptation of means to ends, so peculiarly characteristic of animated nature, as introducing a new object of investigation, a new principle of arrangement, which scarcely find a place in the purely physical sciences. The influence which this principle has had in misleading physiologists is thus beautifully traced:—

"In pursuing these fascinating subjects of inquiry, physiologists have too often lost sight of the essential line of distinction which should be drawn between the relation of means and ends, and that of causes and effects. In framing theories to explain the phenomena of life, they have most frequently satisfied themselves with pointing out their final causes, that is, the objects which are answered in the economy: and as the detection of this final cause often calls for the exertion of considerable sagacity, the inquiry has been suffered to terminate here; and it has not been perceived that the physical theory was left in as great obscurity as before. This proneness to substitute final for physical causes has been the source of frequent delusion, by insensibly leading the inquirer to believe that he is really in possession of the physical law on which the phenomenon in question is dependent, when in fact he has done nothing more than given to it a name with reference to the intelligent agency by which it was adjusted to its object. In their eagerness to grasp at this kind of knowledge, physiologists have thus too often mistaken the shadow for the substance.

"The writings of the older physiologists exhibit continual instances of this confusion of ideas. Thus the notion of an *archeus* or *anima*, entertained by Van Helmont and Stahl—that is, of a presiding spirit, to the operation of which they referred all the vital actions—although, perhaps naturally suggesting itself to the mind, is yet evidently an unphilosophical assumption, incompetent to explain the phenomena in question, and occasionally even at variance with these very phenomena.

The *Vis medicatrix naturæ*, to which Hoffman and Cullen so frequently appeal in their pathological reasonings, and which supplied them with ready solutions for every obscure morbid change that embarrassed them, was, in fact, nothing more than a branch of the same doctrine.

"Nor have the more sober theorists of modern times been sufficiently on their guard against this illusion. In the attributes which John Hunter, the greatest physiologist since the days of Haller, ascribes to his diffused vital principle, we may continually trace the same want of discrimination between the intelligence, by which the conditions of animated nature were originally adjusted to a variety of contingent circumstances, and those physical laws and agents, by the instrumentality of which the intended objects are attained. When it is said, for example, in the language of this school, that the coagulation of the blood is occasioned by 'the stimulus of necessity,' it is clearly the final cause only, and not the physical cause of this phenomenon that is assigned:

and it is also evident that no advance is thereby made towards the discovery of the latter.

"On the subject of the coagulation of the blood, Hunter uses the following expressions:—'My opinion is, that it coagulates from an impression; that is, its fluidity under such circumstances being improper, or no longer necessary, it coagulates to answer now the necessary purpose of solidity. This power seems to be influenced in a way, in some degree similar to muscular action, though probably not entirely of that kind; for I have reason to believe, that blood has the power of action within itself, according to the stimulus of necessity; which necessity arises out of its situation.'—*Hunter on the Blood.*

"In like manner, the principle of life is represented as a new power with which organized beings are endowed; a power which modifies and controls the operation of those simpler physical laws to which matter, in its unorganized state, is subjected; a power which imposes new cohesive forces on the materials of the solid structures of the body, which imparts to the fluids a new property of coagulation, which alters the order of chemical affinities between their elements, retaining them, contrary to their natural tendencies, in a certain state of equilibrium, and resisting the agency of several causes tending to destroy that equilibrium; and which, lastly, produces in a degree somewhat corresponding to the wants of the system, either an evolution or an absorption of caloric. All these, it must be acknowledged, are purposes of manifest utility; being directly conducive to the welfare of the individual, and indeed essential to its continuance in the living state. As means conducive to a specific end, the reference of all these phenomena to the same class is unobjectionable. The fallacy lies in regarding it as a philosophical generalization of effects of a similar kind, indicative of the operation of a simple power in nature. Between many of the effects in question there exists not even the remotest analogy. But it is the fundamental principle of the method of induction that similar effects alone are to be ascribed to the agency of the same principle. Judging from the observed effects, therefore, which differ much from each other, as well as from other phenomena in nature, we ought to infer the agency of several distinct principles, the concurrence of which is required to produce all the complex phenomena of life. We are, no doubt, unavoidably led to view these phenomena as conjoined, because we readily perceive that they tend to the same object, the preservation and welfare of the beings to which they relate. But the unity of design is an attribute of intellect alone, and does not necessarily imply the unity of the agents employed in their production. However natural it may be to conceive the existence of a simple principle of life, and however possible it is that this hypothesis may ultimately be established as the true one by future discoveries, we should recollect, that, in the present state of our knowledge, it is a mere fiction of the mind, not countenanced by the phenomena themselves, in which we see so much diversity, and therefore not admissible as the result of a truly philosophical induction.

"Bichât, who was impressed with the necessity of drawing certain

lines of distinction between the powers of life, has nevertheless perplexed his system by taking final causes as the basis of his divisions, a principle which is incompatible with a philosophical analysis of those powers. Thus, the distinction which he labours to establish, between the muscular contractility of animal life, and that of organic life, is founded, not upon any real difference in the nature of the power concerned; for, as I shall endeavour to show in a future part of the course, the power which resides in the muscles of the voluntary and of the involuntary motions is, in all cases, the same; but upon a difference in the application which is made of this power in the economy.

"Dumas has been guilty of a more palpable error, in thinking it necessary to add to his catalogue of principles, consisting of the acknowledged powers of sensibility and contractility, a third power, which he terms '*force de résistance vitale*;' thus associating a final cause with causes that are strictly physical. To multiply examples of this mistake would be endless; for it vitiates almost every physiological system that has yet been framed."

It is fortunate for the progress of physiology, that there exist minds of such an order as that of Dr. Roget, which are capable of detecting the subtle principles of a false generalization, and of recalling science to her legitimate path. Confined within her proper limits, the benefits conferred by physiology on medicine are innumerable.

Dr. Barry's Hypothesis on the Causes of Venous Circulation.—Dr. Barry conceives the lungs to resemble a pair of bellows, communicating with the atmosphere, by means of the trachea. During inspiration, the chest being expanded, its cavity is increased, and of consequence a vacuum, or at least a tendency to a vacuum is produced. If an India rubber-bottle have its sides suddenly expanded, and its capacity enlarged, the air within will be more rarified, will possess less specific gravity, and exert less pressure than that without: and a greater or less degree of what is falsely termed a vacuum, will be produced. The degree and the duration of this vacuum will depend on the diameter of the tube, forming the neck of the bottle, and the rapidity with which the enlargement has been effected. The equilibrium between the pressure of the external and internal air being destroyed, the former rushes in by the neck, or whatever opening it may find into the vessel; if the neck were immersed in a fluid, such as blood, the air unable to pass through the fluid would press upon its surface, and force a portion of the blood to rise into the neck or body of the vessel. Were the side of the bottle also perforated by a tube, one end of which was placed in the blood, and the other communicated with the cavity, part of the fluid would likewise be forced to rise into the bottle through this channel, contrary to its own gravity. To make

the resemblance complete, another step is wanting. The neck of the bottle must be taken out of the blood, and left in free communication with the atmosphere, so as to represent the trachea. Supposing the sides of the bottle were now suddenly expanded and a vacuum produced, the tendency of the air to rush in by the neck and by the tube would be equal. Air would rush into the former, and blood would be forced to rise in the latter, until the equilibrium was restored. In such a case, it would not signify whether there was one tube only, or whether, as Dr. Barry has expressed it, the tubes surrounding the vessel were as numerous as the quills of the fretful porcupine; it is obvious that so long as there was a comparative vacuum, there would be an equal pressure of the atmosphere exerted on each tube, forcing their contents towards the centre of the vessel. All that Dr. B. wishes to be allowed, all that he contends for is, the tendency to form a vacuum in the chest, produced by its expansion during inspiration. If this be granted, and he affirms it can be demonstrated by experiment, then all the other points in his doctrine must follow with as much certainty as the very existence of the laws of nature, on which these phenomena depend.

Granting that atmospheric pressure exerted the influence on circulation, which is assigned to it by this hypothesis, it follows that the blood would only enter the chest during its expansion: and hence many of Dr. Barry's experiments are designed to prove that the venous current only flows towards the heart during inspiration. One end of a spiral-glass tube was placed in a coloured liquid, the other was introduced into the jugular vein of a horse. During the inspiration of the animal, the coloured liquid rose in the tube and descended during expiration. To ascertain this still more satisfactorily, Dr. Barry, making an opening in the abdominal parieties of a horse, passed into it his hand and arm, the fleshy part of which was firmly embraced by the edges of the wound, so as perfectly to exclude the external atmosphere; passing his hand onward, he divided the diaphragm, and introduced his arm into the thorax of the animal: the opening in the diaphragm being such as to press with its edges tightly upon his arm, and prevent any possible admission of air from the abdomen, or from without. Here he laid hold of the vena cava, which in the horse traverses the thorax in one part altogether loose, and unaccompanied with any other vessel or organ, and grasping the venous tube, he distinctly felt it filling and swelling during inspiration; but during expiration its sides collapsed, and he felt as if it had escaped from his grasp. In another experiment the thorax of

a small dog was perforated, and one end of a flexible tube was introduced into the sinus venosus of the heart, the other end was in communication with the bulb of a barometrical tube, the mercury in which stood at the usual height, but on the communication, we have mentioned, being made, so much of the pressure was removed by the vacuum within, as caused the mercury to descend two inches and a half. The same effect was produced in a similar experiment with a pigeon, in which also, during inspiration, the mercurial column sunk to the same extent. When the trachea was divided and a stop-cock attached to it, on the stop-cock being closed, the mercury, on inspiration of the animal, descended five inches. These experiments, in Dr. Barry's mind, fully establish the formation of a considerable vacuum in the chest, during its expansion. To this vacuum, by a universal law of nature, all the fluids in communication with the chest must necessarily tend. Not only the blood in the branches of the veins would be thus directed to the cavæ and sinus venosus; but, on the same principle, the chyle and lymph from the extreme parts of the body would be drawn towards it, to pour their contents into the left subclavian. From the free communication of the venous with the absorbent systems, and from the veins themselves performing the office of absorbents, the absorbing power of the system will be regulated by the atmospheric pressure. Hence the corrollary, that by taking off this pressure from any part of the body, the process of absorption will be suspended. This deduction is also supported, according to the opinion of Dr. Barry, by direct experiment: such as the now well-known application of the cupping-glass to parts in which poison has been recently inserted.

This plausible hypothesis, resting upon experiment and on principles identical with the very laws of the universe, has been lately assailed through the medium of counter experiments, and arguments which, if they have not overthrown its fundamental principle, have, at least, shewn its influence to be very insignificant indeed, compared to what was imagined.

The experiment of introducing a tube into the jugular vein or thorax of an animal has been performed, and while the horse was in the erect position, and its breathing at the natural standard, there was no rising of the coloured fluid perceptible in the tube, as described by Dr. Barry. When, however, the animal was thrown down, and its respiration became laborious, the fluid passed up the tube with considerable rapidity. Messrs. Ellerby and Searle, who have taken the trouble of repeating some of the experiments of Dr. Barry, have satisfactorily explained this circumstance on the principle that, during laborious respiration,

the cavity formed by the rapid expansion of the chest, cannot be so quickly supplied through the trachea, but that a considerable vacuum is formed, such as is sufficient to overcome the force of gravitation, and thus to admit of the rising of the fluid into the tube. Mr. Searle has illustrated this opinion by a pair of bellows of the common form, but without any valve, and the muzzle of which bears the same relation to the cavity as the trachea does to the thorax. There were three tubes entering the sides of the bellows, the external extremities of which were inserted in a vessel of fluid, while the internal communicated with a reservoir in the under part of the bellows. The cover of the bellows was formed of glass. When this was raised and depressed slowly, say at the general rate of respiration, there was no rising of the fluid in the tubes, no tendency of their contents to flow into the reservoir within, but when the action was more frequently repeated, when it went considerably beyond twenty-five in a minute, then the vacuum being formed so much more rapidly than could be immediately supplied through the muzzle of the instrument, the pressure within was in the same proportion diminished, and the fluid passed quickly through the tubes into the internal cistern. By this simple contrivance it is thus satisfactorily shown, that in ordinary respiration the disturbance in the equilibrium of pressure, between the interior air of the chest, and the external atmosphere is so slight as to have no apparent effect in overcoming the force of gravity, and could not be rationally regarded as having much power in raising a column of blood to the heart, or as exerting that paramount influence on the venous circulation which Dr. Barry ascribes to it.

The hypothesis, moreover, has been deprived of the support it received from the cupping-glass, by an experiment as simple as it is effectual. Mr. Ellerby arrested the absorption of poison by pressing a ring around the part in which it had been inserted, thereby proving that mechanical pressure was entirely adequate to produce the effect which had been ascribed to removal of the pressure of the atmosphere.

From the results of these experiments, from the difficulty of explaining on this principle the hepatic, placental, and fœtal circulation, and from the absolutely contradictory phenomena presented by many of the subjects of comparative anatomy, we are inclined to believe that the suction power of the heart, and atmospheric pressure hypotheses, will soon sink again into their primeval insignificance.

*Experiments to determine the interval between the ingestion of various substances, and their appearance in the Urine**.—The

* Par M. G. A. Stehberger, D. M. Zeitschrift für Physiologie.

experiments which we are about to mention, have been made upon a young man, 13 years of age, affected with congenital prolapsus of the bladder. The prolapsus formed at the lower part of the abdomen a projection of three fingers' breadth, which was red and fungous, always moist and sensible to the touch. The urine issued continually from the ureters, which were completely exposed and admitted of the secretion of the kidneys being collected perfectly pure and unmixed. When the urine was re-examined in its natural state, and when the young man was fasting, it was found of an intense yellow colour, of a nauseous smell and saline taste. It restored to blue the paper of turnsole which had been changed to red by an acid. When any substance had been administered, the urine was collected every ten minutes, until indications of it were perceived. It was then examined every quarter or half hour, until the urine had returned to its original character. In this manner the progressive augmentation or diminution of the foreign substance was observed. The result of these experiments, which were made under the superintendance of M. Tiedemann, are as follow :—

I.—Among the substances swallowed the following were found in the urine : 1, the colouring matter of rhubarb; 2, that of black cherries; 3, that of madder; 4, that of myrtle berries; 5, that of logwood; 6. indigo; 7, the colouring principle of the pulp of cassia; 8. Gallic acid; 9, tannin of the uva ursi; 10, prussiate of potash and iron; 11, a constituent part of the rob of elder, which gives to the urine an intense yellow colour.

II.—The substances swallowed which could not be detected in the urine are—1, the colouring matter of the tincture of turnsole. This substance is destroyed in the alimentary canal, as ascertained by the experiments of MM. Tiedemann et Gmelin; 2, the bitter principle of quassia; 3, the ferruginous tincture of bestuscheff; 4, the acetate of the protoxid of iron.

III.—The substances employed under the form of baths, of fomentations, and of embrocations, have not re-appeared in the urine, with the exception of the oil of turpentine and the acetate of potash. The oil of turpentine communicated a violet odour to the urine, merely from the inhalation of its vapour. The other substances tried on the exterior of the body, and which have not passed into the urine, are the aqueous and spirituous tincture of rhubarb, the decoction of logwood and the solution of gallic acid.

IV.—With regard to the time of the appearance of substances in the urine after having been swallowed—madder is perceptible in 15 minutes; indigo, 15; rhubarb, 20; gallic acid, 20; decoction of logwood, 25; the colouring principle of myrtle berries, 30; black cherries, 45; astringent principle of the uva ursi, 45; the pulp of cassia, 55; the prussiate of iron, 60; rob of elder, 75. The author adds, that the time in which substances may appear in the urine may vary accord-

ing to the state of the alimentary canal, and according to the solubility of these substances in the juices of the digestive organs.

V.—The inhaled vapour of the essence of turpentine is apparent in the urine after an interval of 15 minutes, whilst that of the odour of the violet has not been recognised until 25 minutes after the application of the same substance to the skin.

VI.—One may observe that the matters introduced by the mouth and found in the urine a certain period, return in the quantity of substance contained in the urine. This point varies considerably; it occurs in experiments with madder in about an hour; with black cherries, one hour and a quarter; with the tincture of indigo, one hour three quarters; with decoction of logwood one hour and a quarter; with tincture of rhubarb, after one hour and twenty minutes; with uva ursi, one hour three quarters; myrtle berries, two hours; gallic acid, two hours and a quarter; pulp of cassia, four hours.

VII.—The complete disappearance of substances from the urine also occurred at different periods. For example, in the experiments with prussiate of potash and iron, it took place after three hours and three quarters; indigo, four hours and a half; rhubarb, six hours twenty minutes; decoction of logwood, six hours three quarters; uva ursi, seven hours twenty minutes; myrtle berries, eight hours three quarters; madder, nine hours; gallic acid, eleven hours; pulp of cassia, twenty-four hours.

It results from these experiments, that the kidneys perform an important part in the process of assimilation, in contributing by their activity to preserve the nominal composition of the blood. Heterogeneous matters absorbed into the alimentary canal, either by the skin, or introduced into the mass of blood, but which cannot assimilate with it, are expelled by the kidneys, which thus contribute essentially to support the nourishment and life of the body.

On the Application of Galvanism to the Nerves of the Orbit, in Amaurosis.*—M. Magendie has been led, from the results of several experiments, to form the opinion that the integrity of the fifth cerebral nerve is requisite to perfect vision, and hence he has sought for the cause of some of the varieties of amaurosis in the affections of this nerve, and has directed his remedies to its branches in the neighbourhood of the orbit. Acupuncturation and galvanism have been applied by him with this view. He had first, by experiments on animals, come to the conclusion that nerves may be penetrated by needles without any injurious consequences. Acupuncturation was then employed in a young man who had amaurosis; a steel needle being passed through the frontal nerve. The patient immediately experienced a prickling sensation in all the extremities of the nerves. The infra-orbitary

* Journal de Physiologie, Avril, 1826.

nerve was next perforated, and the same effects produced. The lacrymal branch of this nerve was also punctured, on which a singular sensation was immediately felt in the orbit, and there was a copious flow of tears. The amaurosis was not removed, or even lessened, by this treatment. Needles were then thrust into the frontal and infra-orbitary nerves, and a galvanic circle was formed, the needles being connected with the opposite poles of a voltaic pile. Whenever the galvanic circle was formed, the patient experienced a painful excitement in the course of the nerves; the pupil also contracted, and the light was more clearly perceived. After fifteen days of this treatment, the pupil assumed its usual size, and the amaurosis was diminished. The future progress of the case is unknown, as the patient soon after left Paris; but M. Majendie has applied the same treatment to patients in whom the amaurosis was not so complete, and it has been attended with very general success. In one instance of amaurosis in which there was palsy of the upper eye-lid and of some of the muscles of the eye, the disease was perfectly removed in three months. He assures us that this mode of the treatment of amaurosis is never attended with inconvenience or danger.

Effects of Hyoscyamine and Atropia.—By Dr. F. Reisinger, of Landshut*.—"Hyoscyamine, prepared from the henbane seed, I found to be an extremely-powerful substance for the dilatation of the pupil. A small drop of a solution of hyoscyamine (gr. 1 to ℈ ss. of water) was introduced into the eyes of some dogs and cats; the eye was scarcely at all irritated in any case, nnd the pupil was so considerably widened, that, an hour after the application of the solution, only a small ring of the iris could be seen beyond the edge of the cornea; and, after three hours, the pupil appeared as large as the cornea itself, without the power of vision being diminished, or any other bad symptoms being induced, even when the solution was introduced into both eyes. After three days, the dilatation of the pupil first began to diminish, and it was not before the sixth day that the iris recovered its natural state. A drop of a solution of extract of hyoscyamus, containing five grains of the extract to half a scruple of water, produced in the same eyes a considerable irritation from the space of from five to eight minutes, which was shown by the secretion of tears, shutting of the eye-lids, rubbing of the eye-brows with the feet, &c.; and a much less complete dilatation of the pupil, which in dogs disappeared after six or eight, and in cats after twenty-four hours. As soon as we learnt by these experiments, which we frequently repeated, that the hyoscyamine did not, in its action, injure either the conjunctiva, or any of the other deeper-seated organs, as, for instance, the retina, I proceeded to apply it on the human eye, and found that a drop of a solution of one

* Edin. Med. and Surg. Journal.

grain of hyoscyamine in a drachm of distilled water, applied to the eye of a cataract patient, 71 years old, produced such a dilatation of the pupil, that only a small ring of the iris was apparent. The pupil continued dilated seven days, during which time the old woman could see moderately well, and no irritation whatever was produced in any part of the eye. At another time, a drop of a solution of five grains of extract of hyoscyamus, in half a scruple of water, applied to the same eye at another time, produced a considerable burning, and only a moderate dilatation of the pupil after twelve hours. From other experiments with the hyoscyamine, we obtained nearly the same results. The hyoscyamine, which was obtained from the stalk and leaves of the plant, irritated the eye much more, and was less efficacious than that obtained from the root.

"The experiments made with the atropia, under nearly the same circumstances, produced results similar to those obtained from the hyoscyamine. The atropia prepared from the root scarcely appeared to excel that obtained from the other parts of the plant in its efficacy.—Both kinds of atropia acted on the eyes of animals very powerfully, so that the iris was almost invisible; but this extreme dilatation did not continue more than two days. Although it may be necessary to make a greater number of experiments to determine which of the two substances is the most active, still there can be no doubt of the superior excellence of the narcotic bases of these plants over the extracts which are generally used. In iritis, and preparatory to the different operations for cataract, they certainly deserve to be used in preference.

"Dr. Kopp recommended the extract of hyoscyamus to be introduced into the rectum previous to the operation for fistula in ano, for the purpose of dilating the gut; he also advised the extract to be used in the form of clysters, for allaying spasmodic contractions of the rectum, and in that of ointment to be applied to the mouth of the uterus, for the purpose of facilitating difficult births. In all these cases, and in several others, I would suggest the substitution of the hyoscyamine and the atropia for the extracts. At any rate, these substances ought to be used under these circumstances in preference to opium, which acts with so much irritation on the mucous membranes. Whether the internal use of these new medicines be attended with much advantage remains to be determined by the result of new and careful experiments; still, judging from analogy, I think that, in spasmodic affections, their internal use is preferable to that of opium.

"My own investigations into the subject are very limited, and confined to the following observations:—A dog, three months old, swallowed, at ten in the morning, a grain of atropia, obtained from the root of the plant. In half an hour, the ears and tail began to hang, and the dog became inactive, surly, and sleepy. The pupils also were moderately dilated. Towards twelve the dog began to recover itself, and showed a disposition for his accustomed food; but at one the animal became very uneasy, moaned frequently, lay flat on the ground, and slept at intervals. Weakness, and particularly loss of muscular power,

were very apparent; the power of vision was also gone, as the dog tumbled over every thing. As the whole of the body was flaccid, and not in the slightest degree tender, I supposed that the moaning was not produced by pain, but by the loss of his sight, and fear of light. At two I took care that he should take some water and vinegar, with plenty of butter. Still the animal continued in the same state; it also now occasionally yawned; the nose was quite dry; the pupil still more dilated; and the palpitation of the heart was strong and rapid. The passage of the urine and feces was natural. At half-past three vomiting of the undigested food took place; at five the dog recovered itself considerably; and at seven he was quite restored. Another dog, just of the same age, swallowed at the same time a grain of extract of belladonna. In half an hour's time the same symptoms came on as in the other, but in three hours he was perfectly recovered. The same dose of atropia and hyoscyamine were given to some half-grown rabbits, but it did not produce the least effect on them. These animals appear to be very insensible both to the external and internal action of the substances. It is extremely curious that, as soon as the slightest particle of these narcotic bodies was introduced into the mouth of a cat, a copious flow of saliva and of foam came on, and at the same time the animal began to chew and loll out the tongue. I conclnde these remarks with a wish that those medical men who have it in their power will give these principles a trial, and communicate the results of their observations to the public."

SURGERY.

Excision of the lower Jaw Bone.—The removal of the lower jaw-bone, when affected with cancer, or other malignant disease, forms an addition to the resources of surgery of very recent date. For its original suggestion and successful application to practice, we are wholly indebted to Continental surgeons.

Like many other real improvements emanating from the same quarter, it has been lost sight of among the annual importations of rubbish: and although duly announced by the periodical press, has failed to take that hold of the minds of practical men, to which it is entitled from its ascertained efficacy against a class of diseases otherwise fatal.

Although attempts to remove portions of either jaw-bone, when involved in cancerous disease, by means of chissels and scoops, assisted by the cautery, are no novelty in the art, we believe that the removal either of the whole or part of the lower jaw in its entire circumference, originated with M. Dupuytren. We are informed, that having seen in the Hôtel des Invalides numbers of pensioners, from whom large portions of the lower jaw-bone had been shot off, he came to reflect on the practicability of removing by art parts which accident had carried away, without fatal consequences. He per-

formed the first operation in 1812, on the driver of a cabriolet, who had an ulcerated cancer on the chin, and extending to the bone, with the most perfect success. Since that time he has removed, in a considerable number of cases, portions of the jaw-bone, varying in size according to the extent of the disease. His example has been followed by other surgeons, particularly Professor Lallemand of Montpelier, Græffe of Berlin (who informs us that he practised it no less than five times in the year 1823), and in America, by Motte and M'Lellan. In these cases the lower lip has been removed, or allowed to remain, according as it was or was not involved in the disease.

The following statement, made by M. Dupuytren, in a Memoir laid before the Academy of Sciences, will enable the reader to judge of the results of the practice. Out of twenty-five cases which he puotes, three patients only died of the mmediate effects of the oqeration ; five or six, after an interval of so me years, had a return of the original disease, which proved fatal ; whilst eighteen were permanently cured. Of those patients who recovered, there were several who had the whole part of the jaw removed, that supports the teeth.

Hence it appears that amputation of the lower jaw is a much less hazardous operation than has commonly been supposed. The reunion of the divided parts is also rapid ; the incisions of the soft parts usually cicatrise in a few days, whilst the consolidation of the bone, if its state be such as to allow its end to be brought in contact, is seldom protracted beyond the thirtieth day.

We hope that the case recently published by Mr. Lizars, of Edinburgh, in which he removed the greater portion of the lower jaw, for an osteo-sarcomatous tumour, with a most successful result, will tend to remove the unmerited neglect, or dissipate the unfounded prejudices which have hitherto prevented British surgeons from duly appreciating the benefits of this operation.

Mr. Fay *on the Excision of the Teeth.*—We cannot but feel surprised at the apathy which seems to have seized upon the dentists of the metropolis, in having overlooked the acknowledgments which they owe to Mr. Fay for his extraordinary and beneficial discoveries in their art. They are no longer, it seems, to be tooth-drawers, but tooth-cutters. The anxiety and dread with regard to tooth-breaking altogether disappear, and nothing remains but for them to clip away and pocket the guineas with confidence and nonchalance ; with the delightful feeling, in addition, that the more they do the more they shall hereafter *have to do :* their first operation on any mouth committed to their charge being merely intended to sow the seeds of a fourfold golden harvest.

Seriously, however, it may be worth while to inquire as shortly as possible into the pretensions of Mr. Fay. They are, if we understand them aright—1. That he is the inventor of a new surgical operation, which he calls excision of teeth ; and consequently that, 2dly, he has invented the instruments for performing such excision ; 3dly,

that roots of teeth which have been so excised give no uneasiness, do not become diseased, and never require extraction; and, 4thly, that their stumps support the remaining teeth, and preserve the form of the jaws. With regard to his assertion, that excision occasions no present pain nor subsequent uneasiness, we cannot do better than appeal at once to *Mr. Fay's patients themselves.*

Respecting his claim to original invention, it really appears quite absurd that such a claim should be set up, since it cannot fail to be well known to Mr. Fay himself that this identical operation has been practised by dentists for a long series of years, and is to this day had recourse to for the purpose of getting rid of the tops of decayed teeth, with a view chiefly to the insertion of pivots in the cavities of the remaining fangs, in order to carry what is called pivoted teeth. The same process is likewise resorted to at times when the crown of a tooth is ragged, and the patients will not submit to the operation of extraction. This mode of proceeding is nevertheless adopted as rarely as possible by all dentists of the present day who conduct their practice on any thing like true pathological principles, because extensive experience has sufficiently demonstrated the injurious consequences resulting therefrom.

In the second place, Mr. Fay asserts that his instruments are original; but we conceive, if it once be admitted that *the operation itself* is not novel, it necessarily follows that the means of performing it must have been made use of before. In fact, instruments not at all differing in principle from Mr. Fay's, now are, and long have been, in the possession of every practising dentist, although probably not so much resembling the tools of farriers as Mr. Fay's *grandes pinces tranchantes.* If we ask Ewing, that worthy old veteran, and dentist's best cutler, how long he has been in the habit of making these instruments for Waite, Cartwright, Nasmyth, Thomson, Dumergue, &c. &c., although he might not perhaps find it convenient to execute Mr. Fay's orders, we shall come to a pretty fair conclusion as to that gentleman's claims to original invention. Those who are anxious to acquire more minute historical information on this matter, may look into any of the old French authors; or if these should not be readily at hand, they may examine Delaborre's twenty-third figure, at the end of his second volume, where they will find represented Mr. Fay's *pinces tranchantes de divers genres,* without any alteration on the part of that gentleman.

We come now to the third assertion, viz. that the stumps of excised teeth occasion neither pain nor inconvenience—neither becoming diseased nor requiring removal. It is scarcely credible that even Mr. Fay himself should have made such an assertion, disproved as it is by universal experience. Every body knows the nature of the fistulous sore called a gum-boil; and we do not hesitate to say, that if Mr. Fay should live long enough to see those patients who have submitted to his excise, after they have suffered from the vicissitudes of climate, the effects of disease, medicine, &c. he will, from the loss of *custom,* be compelled to abate his confidence. We

can at any rate assert as a fact (for the truth of which we appeal to the experience of all respectable dentists) that *gum-boil, abscess, ulceration of the periosteum,* and *absorption of the sockets,* together with *great pain,* general *constitutional derangement, irritation,* and to crown all, the ultimate necessity for the *extraction* of these fangs or stumps, are sooner or later the almost inevitable results of *excising teeth,* as well as of stumps of every other description being allowed to remain in the head. Such, indeed, are the distressing consequences of leaving stumps in the mouth, whether excised or not, that our best-informed dentists now practise but sparingly, and only in healthy constitutions, the mode of replacing teeth by means of a pivot, from an observation of the distressing consequences so frequently attendant on such practice.

Mr. Fay is made to talk of *healthy roots.* There, however, must certainly be an error in the report. We cannot believe any man to be so absurd as to apply the epithet *healthy* to substances *dead,* as every part of an organized body must be when its vessels are completely destroyed. Mr. Fay also asserts that the cavity in the root is very often filled up with an osseous deposit; but had he examined that matter carefully, he would have found it to be nothing more than *tartar.* It is undoubtedly hard enough to assume the appearance of bone, but affords no security whatever against the diseases to which these roots are liable. With respect to his strong point, viz. the advantages arising from his *new surgical operation,* we have already in brief disposed of the advantage of *pivoting*; and regarding the keeping up the form of the jaw, and supporting the remaining teeth, we maintain the fact to be quite the reverse. It is very seldom that any one uses freely that part of the mouth in which stumps are left, and consequently he twists his jaws into a distorted shape. The irritation superinduced by the presence of bodies which may justly be considered as extraneous, occasions a softening of the bone, and ultimately a much greater (indeed an unnatural) absorption of the sockets, than would otherwise take place. Even though the roots remain in a state of quiescence, they afford no support to the remaining teeth. In fact, they rather tend to undermine them by the irritation, callus, and fungus often produced around, of which circumstance any person may satisfy himself by the bare inspection of the living or dead subject. A very simple consideration, however, will serve to convince every body; for suppose the teeth to be a set of cones, such as the letters V V V V, supported by the contact of their inverted bases, it is evident that if the superior half of one of them be broken off, the remaining half can afford no support to the others; and it is also clear that there is nothing to prevent their falling into the space if their antagonists tend to force them into that position. But the truth is, that Mr. Fay takes a very limited view of the beautiful process of nature, which is rather improperly called the *absorption of the alveolar process.* On examining the state in which nature leaves the jaw, or part of a jaw, from which teeth have been ex-

tracted, after having finished the work, you will find that the term *absorption*, if taken to mean strictly the diminution of substance in a particular part, does really *not* take place, there being actually a new formation: the original alveolar process is absorbed, but a beautiful ridge of bone is substituted, except in cases where violence has been committed, or where nature has been disturbed in her work by the presence of bodies she wishes to get rid of, and is thus forced into what is termed diseased action. This diseased action is generally the consequence of dead roots. In fact, absorption may be said, literally speaking, never to occur except in consequence of ulceration of the periosteum and sockets, induced by the pressure of dead teeth, or remains of teeth.

When, however, the teeth have been removed without much violence to the surrounding parts, and Nature has been permitted to complete her work without interruption, in her usual harmonious manner, you will find that the ridge of new-formed bone is on a level with the alveoli of the original or remaining teeth, possessing a harder consistence and a sharper edge.

As the learned physiologist, M. Serres, observes, "Il reste beaucoup des choses à faire sur les dents." There are many very interesting subjects connected with the teeth touched upon in the notices in the daily prints, in a manner much calculated to deceive the public, and even such medical men as have attended but superficially to this department of practice. The fact is, that certain terms have got into general use in this department, as well as others of the surgical art, which are calculated only to mislead and bewilder; and it is curious to observe their pernicious effects upon the progress of sound reason.

We feel much tempted to dilate on many other points of this most interesting subject, but must now conclude.

It is somewhat strange that the dentists of the metropolis should be dazzled by the brilliancy of two transatlantic luminaries at one time, and that both of them should be so indiscriminately lauded, although their principles of practice are diametrically opposite—the one insisting on "stumping" the public, and the other having written a huge volume on little else than the principles of "unstumping" them.

It is really unfortunate that this branch of the healing art should never have excited the attention of any member of the London Medical Society sufficiently to enable him to contradict the unfounded assertions, and detect the glaring absurdities promulgated by Mr. Fay, at his exhibition in their hall on the 2d of October last.

Excision of the Shoulder Joint.—In caries and other diseases of the joints, excision of the articulating extremities of the bones has been recommended, as our readers know, in lieu of amputation of the whole limb; and trials of the plan have been made in a limited number of cases, on the principal joints of the body, with a variety of results. Whether these results have on the whole been favourable or unfavourable to the general measure, it is needless to inquire, it being manifest

that its applicability and chance of success must be determined in the case of each individual joint *per se*, from a consideration of its particular construction, size, position, office, and other peculiarities.

Of the larger joints, we have always regarded the shoulder as by far the best adapted for this operation, and as probably the only one of the larger joints where the claims of excision will ever practically come into competition with those of amputation. Its superior fitness in this respect depends on a combination of very obvious circumstances; its superficial situation; the small extent of its articular surfaces; the ease and safety with which the head of the humerus can be laid bare; the comparatively small extent and minor importance of the soft parts that require to be divided; the facility with which the *glenoid, acromial,* or *coracoid* portions of the scapula can be removed, if diseased; but above all, the peculiar functions of the shoulder joint, are such as to permit its being cut into with less impediment to the uses and mobility of the limb, than would follow the excision of any other joint of similar magnitude and importance. Thus, should anchylosis be the result, the loss of motion is compensated by the extreme mobility of the scapula permitting the limb to be carried in all directions; or should a ligamentous union or imperfect joint be formed, the functions of such a joint can be performed much more perfectly here than in the lower extremities, where, in addition to simple motion, it would have the weight of the body to sustain. When we contrast the degree of strength and partial motion at the shoulder, the unimpaired mobility of the forearm and hand, and in short, the numerous and valuable services of which an arm remains capable after this operation, with the total deprivation of the limb from amputation, we cannot but feel a strong bias in favour of the former, and an anxiety to have its claims fairly tried. Being convinced that the merits of excision of the shoulder joint, as a substitute for amputation; are far from being duly appreciated by the generality of British surgeons, we think no small credit due to Mr. Syme of Edinburgh, for the publication of a case in which he had recourse to this method with success *.

The subject of his operation was a married woman, aged thirty-eight, who having injured her left shoulder by a fall, about six years before, had ever since continued to labour under disease of the joint. She had suffered much from deep-seated pain, and a succession of abscesses had formed around the joint, leaving sinuses. The disease had slowly but steadily got worse in spite of all treatment; the arm had long been entirely useless, and required constant support in a sling. The *acromion* and *coracoid* processes felt as if somewhat enlarged, but there was little general swelling of the shoulder. The joint was nearly immoveable. Although no diseased bone could be detected with the probe, all the sinuses passed in the direction of the head of the *humerus*, and the discharge was thin and copious. She was tormented with constant gnawing pain in the joint, depriving her of rest; latterly she had suf-

* Edinburgh Medical and Surgical Journal, No. 88.

fered much from diarrhœa, and the state of her health had become greatly impaired. From these appearances, as well as the progress and intractable character of the affection, there could be little doubt that the bones forming the articulation were irremediably diseased; and the state of the system required that the source of the irritation should be removed.

After directing attention for a fortnight to the amendment of her bowel complaint, Mr. Syme determined to cut directly into the joint, to ascertain the state of the bone, with the view either of excising the diseased portion alone, or of amputating the limb, according to the state of the parts. He first carried a longitudinal incision from the acromion downwards, through the centre of the deltoid muscle, as far as its insertion. He thrust the finger to the bottom of the wound, and ascertained by probing, that the disease was chiefly, if not wholly, confined to the head of the *humerus*. A second incision was therefore carried upwards and backwards, from the lower extremity of the first, so as to form a large flap from the external portion of the deltoid. This being held back, the head of the bone was insulated chiefly by means of the finger, and the scapular muscles detached from the tuberosities. The head of the bone was then caused to protrude by moving the arm forwards, and being grasped in the left hand, was sawn off without injury to the soft parts. The glenoid cavity being examined, was found to be denuded of its cartilage, but the bone itself was sound; so was the *acromion;* the extremity of the coracoid being carious, a portion of it was taken off by Mr. Liston's cutting pliers. There was at first considerable bleeding, but the posterior circumflex was the only artery of importance divided. The operation was borne well, and Mr. Syme informs us that it occupied only ten minutes, including the application of the ligatures. Notwithstanding an attack of erysipelas the woman recovered well. In a month the wound had healed. She had continued free from pain up to the date of the report, about six weeks after the operation. At this time, Mr. Syme says, the limb is shortened somewhat less than an inch; it is no longer supported in a sling, and the shoulder joint is susceptible of distinct motion, by means of its own muscles, whilst all the other joints are as serviceable as they ever were. Mr. Syme has given an engraving of the diseased portion of *humerus*, from which it appears that the head of the bone was hollowed out by a caries into a large cavity, leaving merely an external shell of bones.

As in gun-shot wounds, where the head of the humerus has been shattered by a bullet, excision of the fragments is a received practice among army surgeons; we might naturally have looked for the extension of the principle to idiopathic disease of the articulating bones. On the contrary, we are not aware that since the original operation of White, about sixty years ago, the annals of British surgery could boast of more than two similar instances previous to that of Mr. Syme. We will not venture to guess how many arms the last half century has seen suffer amputation for caries of the shoulder joint, but it is not particularly rash to assume that the number of cases suitable for excision must have con-

siderably exceeded *three*. Our surprise at this neglect will not be diminished when we remember that all the three operations were attended by the most encouraging success, nor by the reflection that an operation, aiming like the present, at the preservation instead of the destruction of a limb, is precisely such as an honest surgeon should be proud to perform.

We were recently informed by Mr. Loudon, an intelligent surgeon in London, that he saw, in April last, in the General Hospital at Hamburgh, a male patient on whom excision of the head of the *humerus* had been practised for idiopathic disease of the shoulder joint. The result was even more satisfactory than in Mr. Syme's case. The cure appeared complete, and at the distance of some weeks from the operation, the man was able to raise the arm to his head, whilst the use of the other joints remained unimpaired.

Cittadini's *Case of Unconsolidated Fracture of the Bones of the Forearm, cured by the Excision of the extremities of the Bone**.—In October, 1819, D. Caneschi, a labourer, had both bones of the forearm broken by a blow with a stick, about the lower third of the arm. Under the usual treatment the fracture appeared to unite, and the man returned to his work. In consequence, however, of over-exerting the arm, the newly-formed callus gave way, and in the following January, he was admitted into hospital, with the fracture in a moveable state. After keeping the arm in splints for two months without benefit, attempts were made to excite inflammation, by rubbing with violence the fractured surfaces against each other. This plan was persevered in for three months, the arm being kept in a state of continued extension during the intervals. This having proved equally ineffectual, it was determined to cut off the extremities of the fractured bones. This operation was performed on the ulna, by dissecting the soft parts from the fractured extremities, and cutting about three lines from each of them. It was intended to have performed a similar operation on the radius, but that on the ulna had been so painful and tedious that the patient refused to submit. Severe inflammation of the arm and hand followed this proceeding; terminating, notwithstanding suitable depleting treatment, in extensive suppuration. By proper openings, and counter-openings, the abscesses were cured; at the end of a month the fracture was found to be consolidated; and the patient in time regained the use of his arm.

The preceding case has been quoted by some of the Medical Journals in this country, and passed over without remark. We mention it only because we think it should not be allowed to go forth to the world without a protest against the practice it exemplifies. That an operation so painful, tedious, and dangerous, as cutting into the centre of a limb and dissecting, or rather scraping (for it can be nothing else), the soft parts from around the two ends of a bone, should be employed to effect an object

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* Omodei's Annali Universali di Medicina. No. 111. Marzo. 1826.

which can be invariably attained by a measure so simple and expeditious as passing a seton between the disunited surfaces, betrays either gross ignorance of the present state of surgery, or a still more lamentable deficiency of judgment.

Horner's *Operation for Reuniting Ruptured Tendo Achillis**.—Dr. Horner, the able Professor of Anatomy, in the University of Pensylvania, has made a very ingenious application to ruptured tendon, of the principle first suggested by Dr. Physick, with regard to nonconsolidated fracture in bone. The subject of this experiment was a man of fifty-four years of age, who, from inadvertently stepping into a ditch, had ruptured his tendo achillis, about two inches above the os calcis. When the leg was examined five weeks afterwards, the calf was flattened; the extremities of the ruptured tendon in the rectangular position of the foot were an inch and a half apart, and could be moved easily from side to side; the depression between them was very obvious; and on flexing the foot there was no appearance of the tense cord, commonly made by the tendo achillis when entire. Mr. Horner considering reunion on the usual plan of treating this accident altogether hopeless, from the period that had elapsed, passed a seton between the broken extremities of the tendon. Inflammation shewed itself in two or three days, and continued to augment gradually for four weeks, causing very considerable pain to the patient. The seton was removed at the end of forty-five days, suppuration having been produced by it. The patient was confined to his bed. In five weeks from the removal of the seton, the sore caused by it had healed, and the tendon had completely united; although the patient had not then been allowed, for obvious reasons, to put its firmness to trial.

Dr. Goodman's *Operation for the Cure of Inverted Toe-nail.*—Dr. Godman, of New York, has published an account of a method, by which he has succeeded in curing the inverted toe-nail. After reprobating the cruel operation employed by Dupuytren, called "evulsion of the nail," which we heartily concur with him in stigmatizing as a "disgrace to Surgery," he proceeds to state the case of a lady, affected with the disease in question, accompanied at the time of the operation, with severe inflammation of the extremity of the toe. She was of an extremely delicate habit, and so nervous as to be thrown into convulsion fits by any slight pain or sudden shock.

"With a keen-edged, narrow-bladed and round-pointed knife, (similar to the iris knife of the oculist,) a line was drawn from the root to the extremity of the nail, about one-fourth of its breadth from the inflamed part. The nail was then cut through by small shavings taken from each side of this line until the whole nail was fairly divided to the quick. This was done as gently as possible, so as to produce no pain nor inconvenience to the patient. The point

* Philadelphia Journal of Medical and Physical Science, August 1, 1826.

of the knife was then introduced beneath the nail at the extremity of this section, and moving it very slowly and gently, (the edge being as much as possible directed against the under surface of the nail,) a very small portion of the attachment to the nail was divided at each time; perhaps not more than the breadth of a fine bristle. By working in this manner patiently and slowly, in a short time, a considerable extent was detached, extending from the longitudinal section of the nail towards the inverted part or the lateral margin buried in the diseased integument. As soon as the nail is thus sufficiently separated to allow of its being slightly elevated with the forceps, the operation can be continued more advantageously, though on the same principle, until the whole inferior surface of the nail is detached entirely into the diseased parts, and then a slight use of the knife in a similar manner on its external part at the root and sides will allow the whole diseased portion to be removed without the least degree of violence, and without inducing the most sensitive patient once to shrink from the pain.

"In the first case, about one-fourth part of the nail was thus removed, split through where it was sound, and dissected fairly off from the sound and diseased parts. I have several times repeated the operation since then with the same success, the patients expressing their astonishment during its performance, that it should cause so very trifling a degree of pain as scarcely to amount to a smarting, when the slightest touch or motion of the toe occasions exquisite torture.

"During the Winter I operated upon both the great toes of a gentleman who had suffered for years from recurrence of inflammation produced by inverted nails. Nearly half the nail was removed from both toes, without his expressing the least inconvenience from the operation, though the toes were exceedingly inflamed and irritable at the time."

Wardrop's *Case of Carotid Aneurism.*—Our readers are already acquainted with the important case of Carotid Aneurism, in which the plan of tying the artery beyond the tumour was adopted by Mr. Wardrop. They also know that the reason for hazarding so bold a step was the impracticability of tying the artery in the common way, owing to the contiguity of the tumour to the clavicle. Its successful issue justified the principles on which it was undertaken, and held out a hope that, by an operation formerly tried and abandoned, aneurisms similarly situated might be in future brought within the reach of surgical treatment. Mr. Wardrop has recently had a second opportunity of bringing these principles to the test of experience, under circumstances similar to the former, and the results (so far as the case has hitherto advanced) are such as still farther to establish our confidence in its efficacy. The following is a short history of the case:—Elizabeth Bellamy, aged about sixty, was admitted into the hospital in Panton-square, 1st December, 1826. On the right side and lower part of the neck there was a hemispherical and strongly pulsating tumour, about two

inches in diameter. Its lower margin was in close contact with the internal portion of the clavicle, and it extended two inches upwards in the track of thesterno-mastoid muscle, which was heaved fromits natural situation, and had suffered considerable absorption. She first observed the tumour about six months ago. During the last four years had been subject to giddiness and headache, and had twice been attacked with apoplexy. On admission, her health was much disordered; she complained of headache, throbbing, noise in the ear, thirst, want of appetite, and sleeplessness; legs anasarcous. By bleeding, digitalis, opium, and aperient medicines, these complaints were ameliorated, and, on the 10th, Mr. Wardrop, with the assistance of Mr. Lawrence, cut down on the common carotid, and applied a ligature to it about an inch above the tumour. The ligature employed was the vegetable substance, resembling catgut, used in fishing-tackle; and the ends were cut close. No immediate effect was perceptible on the tumour, but it has since been gradually and progressively diminishing in size, with a corresponding diminution in the force of its pulsations. At this date (fifteen days subsequent to the operation) it has lost more than one half of its original dimensions; the pulsation is daily becoming fainter; the sterno-mastoid has subsided to its natural level; the integuments of the neck are puckered; the patient is in good spirits, and wholly free from her former complaints.

The incision united by the first intention.

Immediately after the operation a remarkable difference was perceptible between the pulsations at the two wrists, that in the right arm being much fuller than the other, evidently owing to the artery being distended by an increased stream of blood.

Case of Axillary Aneurism, in which the Subclavian Artery was tied by M. Dupuytren.—The history of this case is given in the second Number of the "Repertoire Generale." As it is not without interest we shall shortly state the particulars, eschewing the heroics and the prolixity which encumber the original. The subject of the case, Charles Lechevalier, aged 36, and by trade a carpenter, was admitted into the Hotel Dieu on the 27th February, 1819. He had been a soldier in the French army, and in the year 1811, whilst serving in Spain, received a thrust with a back sword (*espadon*) at the posterior part of the left shoulder. There was an instant gush of blood; he fainted; the bleeding stopped; he was taken up; the wound was dressed simply, and by the end of three weeks had completely healed, without the slightest return of bleeding. After two months he discovered in the left arm-pit a small pulsating tumour, not larger than a nut. In the course of two years it had attained the size of a hen's egg, and the pulsation had become stronger. From the exertions attendant on a journey of some hundred miles, performed on foot, the tumour underwent a rapid increase; and when he entered the Hotel Dieu it was larger than the head of a new born child; superiorly it was in contact with the clavicle, which was even raised from its natural situation. Its

pulsations, which were very forcible, could be stopped by compressing the artery firmly with the finger, where it passes over the first rib. After some hesitation as to what course he should pursue, M. Dupuytren determined on tying the subclavian artery above the clavicle at the point where it runs between the scaleni muscles. The only circumstance in the operation worthy of remark is, that to get at the artery, M. Dupuytren thought proper to cut across the anterior *scalenus* at its origin. This is a proceeding not adopted by British surgeons, who go down on the artery much more conveniently just where it emerges from behind the outer margin of the scalenus. The vessel being insulated, a silver director, curved in the form of a quadrant, was passed beneath it, and a ligature formed of three silk threads twisted together, was applied; no ligatures of reserve was used *. The pulsation of the tumour instantly disappeared. In the course of the day the patient, complaining of some pain in the throat, was (very properly) bled. From this time he went on towards recovery without any bad symptom. The ligature was discharged on the 11th day. On the 17th day the wound had begun to cicatrize, the suppuration was diminishing, and the tumour had contracted to one third of its former dimensions. The natural temperature, the sensibility, and muscular energy of the limb were gradually restored, but the pulse at the wrist did not return. In the course of a few months he was able to resume labour as a carpenter. After an interval of three years, and in consequence of over-exertion, the remaining nucleus of the tumour was seized with inflammation, which terminated in suppuration. At the end of a fortnight a spontaneous opening formed, giving issue to a great quantity of pus, and of a substance having somewhat the colour and consistence of resin. This was evidently the remains of the unabsorbed and unorganized coagulum, which had acted like a foreign body in exciting inflammation. The opening again closed, and the patient has since remained free from complaint.

The writer of the above Report in the Repertoire Generale, has subjoined to his case two engravings, for which it appears he "is indebted to the kindness of M. Dupuytren; the one," he says, "represents the situation and size of the tumour previous to the operation, and the second the ligature around the subclavian artery." We also have to express our obligations to M. Dupuytren for the excellent specimens which his plates afford—of the free off-hand way in which our ingenious neighbours go to work, in getting up an anatomical drawing. Our readers will appreciate the fastidious accuracy and fidelity to nature with which these drawings have been executed, when we state that the aneurismal tumour,

* The writer of the case, M. Marx, says that M. Dupuytren did not employ any ligatures of reserve, because he was convinced of their inutility, and even of their danger. If he had attained this conviction in 1819, it is somewhat remarkable that in 1821 we should find him with them in full employ. The writer of this article, during his attendance at the Hôtel Dieu, in 1821, has repeatedly seen him make use of ligatures of safety.

which throughout the case is described as seated in the *left* axilla, appears in the engraving to have taken up its station in the *right*. An equally singular metastasis is observed in the second plate, where, (although the left subclavian is stated to have been tied) we have a view of a ligature placed around the *right* subclavian. Such a mistake might have been indifferent in a surgical point of view, had not the situation of the subclavian artery been considerably different on the two sides of the body.

Mr. Earle's *Case of Bronchocele, in which the superior Thyroid Arteries were tied* *.—The ligature of the thyroid arteries originally introduced by Walther, of Bonn, as a means of checking the enlargement of the thyroid gland, has been practised but seldom by English surgeons. Mr. Earle's case being therefore interesting, we subjoin an abbreviated history of it.

"Jane Larkins, aged 17, a native of Malling, near Maidstone, first observed a swelling on the front of the neck, about the age of 13. It increased slowly till 14, when she began to menstruate. Her menstruation continued regular for two years, and during that time the tumour had considerably diminished; at 16 her menstruation again became irregular; and during the following year the tumour enlarged rapidly. She was admitted into Bartholomew's hospital, 5th December 1822, under the care of Mr. Abernethy. The treatment was chiefly directed towards the improvement of the general health and secretions, which were much disordered. The tumour underwent a slight reduction in size, but her health appearing to suffer from confinement in the hospital; and the pulmonary complaints, to which she had previously been subject, having increased, she was recommended to return to the country. On the 15th July following, she again returned, and was admitted under the care of Mr. Earle. She stated, that since her dismissal the tumour had increased, particularly during the last two months, causing so much difficulty of respiration as at times to threaten suffocation. When examined, the bronchocele was found evidently much increased in size; the superior thyroid arteries were greatly enlarged, and their pulsation was augmented in force, particularly that on the right side, which communicated to the finger a peculiar thrill, leading to the supposition of its coats being diseased. She was incapable of swallowing solid food; pulse 120; bowels costive; the catamenia had not appeared for five months. The cough and pain of the chest had returned with aggravation, and she complained of constant headache and drowsiness. Trial was made, during a fortnight, of leeches, evaporating lotions, purgative and mercurial medicine. She also took liquor potass. hydriod. m. x. ter in die; but this was soon discontinued on account of producing nausea†. The tumour, notwith-

* London Medical and Physical Journal, Vol. 1. No. 3.

† It may be thought, and we ourselves are inclined to think, that the powers of Iodine did not in this case receive a sufficient trial. The occurrence of nausea scarcely formed a valid reason for its discontinuance, or at least did not prevent its being used in some other form, as that of friction, with the ointment of

standing, continued to enlarge, and the obstruction of respiration became so great as to threaten suffocation. On the 1st of August, Mr. Earle applied a ligature to the right superior thyroid artery (it being more enlarged than the left). It was healthy, but nearly equal in calibre to the carotid.

"The most acute pain in the head immediately followed the tightening of the ligature. The pulsation in the tracheal side of the artery diminished materially, but did not entirely subside. About half an hour after the operation, the pain in the head continuing, twenty ounces of blood were taken from the arm, which afforded some relief. Cold cloths were directed to be constantly applied to the tumour, and the patient's head was much elevated with pillows.

"At four *p. m.* the pain had abated, but there was much drowsiness; the pulse at the wrist quick, but not full; the carotids beating with greater violence than before the operation, the pulsation being evident at some distance along the course of the thyroid up to the ligature.—Saline purgatives, with tincture of digitalis, were ordered for her.

"August 3d. She passed a bad night. Her pulse was rapid, tongue furred, and the drowsiness amounted to coma; the pulse in the carotids greatly exceeding in proportion that at the wrist. The bowels were moved with calomel and jalap, and twenty leeches were applied to the temples, which continued bleeding the whole day, and afforded great relief. In the evening, all her bad symptoms had abated, and her breathing was greatly relieved. She passed a good night, and continued to improve.

"On the sixth, the tumour was measured, and found to be considerably smaller; respiration and deglutition performed with comparative facility; the pulsation in the thyroid and whole tumor much diminished: on the tracheal side it had ceased, and the left thyroid beat with much diminished force. The cough had nearly left her.

"On the 11th, the neck was measured again, and the tumour was found to be much diminished. The portion of the artery between the ligature and the carotid had ceased to beat. The patient stated herself to breathe and swallow with greater ease than she had done for the last two years. The ligature came away in the evening in the poultice.

"From this time to the 24th, every thing went on favourably. On measuring the neck, the tumour was found to have diminished three and a half inches in circumference, principally on the right side.

"As the girl was anxious to return home to her friends, and her health began to suffer from confinement, she was dismissed on the 28th of August, with an understanding that if the tumour at all increased, she would return, and have the artery on the left side tied.

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the hydriodate of potash; a mode of employing it now generally preferred by Coindet and others, to its internal exhibition. It ought, however, to be observed that the *goitre* in this case evidently belonged to that species which Walther has termed the aneurismal goitre, distinguished by the great enlargement of the arteries, and the pulsatory character of the tumour, a species which he has farther generally found rebellious to Iodine, and every other measure short of the ligature of its vessels.

'On the 11th of September, she came back, in consequence of her finding the tumour remain stationary, and the artery on the left side pulsate with increased force. On the 17th, the artery was secured; it was healthy in its texture, and about the size of the radial artery. The patient suffered a good deal from hysteria and apprehension before the operation, dreading a return of the severe pain in the head and coma. Leeches had been previously applied, and her system much depleted by saline purgatives. No alarming symptoms followed the application of the ligature. The diminution in the size of the tumour was not nearly so great nor so rapid as after the first operation. The ligature came away on the 1st of October, on which day the menses re-appeared, after an interval of nearly seven months.

"On the 10th, the patient finally left the hospital, having no cough, no impediment in swallowing, and respiring with perfect freedom. The tumour was evidently smaller and softer, and appeared more divided in its texture. I heard from her in November, and again in January, 1824, at which time the tumour continued slowly to decrease, and her health was greatly restored.

"The fortunate termination of this case was the more gratifying, as it was the general opinion, before the first operation, that all attempts would be in vain, in consequence of the supposed diseased state of the girl's lungs."

Mr. TAIT'S (*of Paisley*) *Case of Double Inguinal Aneurism, successfully treated by the Ligature of both Internal Iliac Arteries* *.—We consider it our duty to notice (and our limits will not allow us to do more) this very extraordinary, we may say, unparalleled case. The subject of it, a stout drayman, presented himself in the fall of 1824, to consult Mr. Tait concerning a tumour in the right groin, of the size of an orange, which Mr. Tait soon discovered to be an aneurism of the femoral artery; and on examining the left groin, he discovered, with surprise, another, but smaller aneurismal tumour, in a precisely similar situation. A careful investigation of the state of the heart and arterial system, convinced Mr. Tait that the disease was not constitutional; an opinion confirmed by the fact that the patient had perceived the tumour on the right side, shortly after receiving a severe bruise in the right groin from the sharp edge of a heavy cask, and that sometime afterwards he had struck his left groin with considerable force against the hind shaft of a cart. We shall not enter into the history of the operation, farther than to state, that after a lapse of some months, occasioned by the patient's unwillingness to submit to an operation, Mr. Tait tied the right internal iliac artery; that after the further interval of a year, occasioned by the same cause (during both of which intervals each tumour greatly increased) he performed a similar operation on the left artery. Both operations were followed by the cure of the aneurismal tumours, and the patient regained his full strength.

It is gratifying to think that there are, in our provincial towns, sur-

* Edin. Med. and Surg. Journ. July 1826.

geons ready to undertake, and capable of acquitting themselves with credit, in the performance of the very highest exercises of operative surgery;—men, who are capable of treading in the paths which the genius of the Coopers and the Abernethys have opened up to them.

On the Bilateral operation for Stone.—Among the various innovations that have recently sprung up in the surgery of the bladder, the introduction of the transverse or bilateral operation is not the least important. The recurrence which it presents to the earliest kind of lithotomy recorded in history, that described by Celsus, and the fact that it owes its origin to an improved interpretation of the Roman classic, renders it not the least curious. The "plagâ lunatâ cornibus ad coxas spectantibus paululum," had been variously translated and understood by surgical writers, and after the time of Paulus Eginetus, who taught that the Celsean incision ought not to be made in the middle of the perineum, but on one side and obliquely towards the hip, a lateral incision had come into universal practice.

Bromfield, we believe, was the first modern writer who insisted on what is now generally admitted to be the real situation of the incision described by Celsus. He has even given a plate, representing the incision extending in a cresentic form, across the perineum, in front of the anus. Here the matter rested, and as a piece of mere literary criticism, dropt into oblivion. No advance appears to have been made on the ideas of Bromfield till about twenty years ago, M. Chaussier, since professor in the School of Medicine at Paris, was led, we are told, without any knowledge of what Bromfield had done, to take a similar view of the meaning of the passage in Celsus. This induced him to undertake some researches on the dead body, to ascertain the practicability of an operation based on that of Celsus, that is, having for its principle a transverse incision of the perineum in front of the anus, and a corresponding transverse incision of the prostate gland, stretching to both sides. He accordingly contrived, and repeatedly practised on the dead body an operation founded on this principle, the details of which are to be found in an Inaugural Dissertation maintained before the Faculty of Medicine of Paris in 1805, by M. Morland*. Chaussier's operation does not appear to have ever been performed on the living body, and indeed attracted so little notice, that eight years afterwards the celebrated Beclard was pursuing a similar line of research in ignorance of M. Chaussier's labours; and published in 1813, in his Thesis† a similar criticism on the passage of Celsus, and the description of an original operation perfectly analogous to Chaussier's, without taking the slightest n oticeof his predecessor. "The study," he says, "of this passage of Celsus decided me to make trials on the dead body, with the *view of discovering* his method of cutting for the stone. In consequence of these researches I have been led to divide the neck of the bladder in a way

* Propositions sur divers objets de Medecine. Dissert. Inaug. No. 508. Paris, an. xiij.

† Propositions sur quelques points de Medecine. Paris, Aug. 1813.

that, to me, appears to possess some advantages. A catheter being introduced into the bladder (this, however, formed no part of the method of Celsus), I make, in front of the anus, a curved incision with the extremities turned towards the ischia; in the middle part of this incision I search for the groove of the staff, and divide on it the membranous part of the urethra; through this opening I introduce an instrument capable of making an incision nearly transverse, of the neck of the bladder. These instruments are of several kinds, I have constructed, a gorget almost flat, with a double cutting edge; the button point inclining towards the convex surface. I introduce it with the concavity turned downwards. I have also had an instrument constructed analogous to the lithotome caché of Fr. Cosme. It is a bistoury with two concealed blades, which are made to separate from each other and from the stalk, in such a direction as to describe a line nearly transverse, but slightly curved downwards*."

Beclard often described this operation, and exhibited it on the dead body at his surgical lectures; but he went no farther. In fact, the operation never excited general attention till the year 1824, when it was performed, for the first time on the living body, by M. Dupuytren, at the Hotel Dieu. He has since performed it five times with uniform success.

In the latter end of 1825, an arrangement was made between M. Dupuytren, and his colleagues at the Hotel Dieu, MM. Breschet and Sanson, to institute an extensive trial as to the comparative results of three different kinds of lithotomy. It was determined that the three surgeons should operate in rotation on the stone cases admitted to the hospital, each confining himself to one method.—Dupuytren to the bilateral, Breschet to the lateral operation of Fr. Cosme, and Sanson to the recto-vesical operation. Eleven cases have since been operated, out of which there has been one death, consequent on the recto-vesical operation.

The studied silence preserved by Dupuytren and his partisans regarding the history of the transverse operation, is truly ridiculous.—Although they dare not advance such a claim, they are evidently desirous that he should be tacitly assumed as the inventor of the operation. The following description of his mode of operating will enable the reader to judge on this point:—

The instruments which he employs are a common sound, a bistoury, and a lithotome, resembling in appearance that of Fr. Cosme, but containing two curved blades, which, by means of a spring, are made to fly out in opposite directions. The handle of the lithotome moves on a screw, so as to regulate at will the extent of the separation of the blades.

The patient being placed in the common position, and the sound held as usual, an incision is made with a bistoury, about half an inch anterior to the anus, cutting the raphé at right angles, and leaving its

* Op. cit.

extremities slightly turned downwards towards the ischia. A second incision divides the lower part of the urethra. The point of the lithotome is then made to slide along the groove of the staff onwards into the bladder; the concavity of its stalk is turned downwards; the blades are made to diverge, and, in withdrawing the instrument, they divide in a transverse direction, and on each side of the median line, the orifice of the bladder, the lateral lobes of the prostate gland, and a small tongue-like portion of the membranous part of the urethra. The other steps of the operation present nothing peculiar.

The principal advantages which the transverse operation appears to us to enjoy over the lateral, are :—

1st. It gives a greater extent of opening, with a smaller deviation from the median line; and, consequently, diminishes the risk of wounding the pudic arteries, and also diminishes the necessity of carrying the incision of the neck of the bladder beyond due bounds.

2d. It is attended with less risk of wounding the rectum.

3d. It secures the vesiculæ seminales.

4th. The communication between the external wound and that of the bladder is more direct. And,

5th. It is of easier execution.

*Congenital Luxation of the Femur.**—We are already acquainted with two varieties of luxation of the femur—the accidental and spontaneous; a third has been lately described by M. Dupuytren. The congenital luxation of the femur consists in a transposition of the head of the bone, from the cotyloid cavity to the dorsum ilii, or external iliac fossa, a transposition which is observed from birth, and which seems less the effect of any accident or malady, than the result of a want of depth in the acetabulum.

This displacement is distinguished by a shortening of the affected limb, and an ascension of the head of the femur into the external iliac fossa. It has also for its characteristic marks a projection of the great trochanter, a contraction of the muscles of the upper part of the thigh, towards the crest of the ilium, where they form around the head of the femur, into a species of cone, the base of which rests on the os ileum, and the summit is at the great trochanter. The tuberosity of the ischium almost denuded, through the displacement of the muscles; the inversion of the thigh, and, of course, the direction of the heel and of the ham outwards, and of the knee and point of the foot inwards; an obliquity which is greater in proportion to the age of the individual and the dimensions of the pelvis, from which there results a tendency in the thighs to cross each other; a sharp retiring angle at the superior and internal part of the thigh, at the point where it is united to the pelvis; the emaciation of the whole of the limb, but more especially of its upper part; all these are symptoms of this species of luxation.

If we attentively examine the movements of a limb in this condition,

* Repertoire Generale. Paris, 1826.

we shall find the power of abduction and of rotation very circumscribed, and a general inaptitude in the member to perform the various motions belonging to the lower extremities.

If we examine an individual thus affected, while standing, we are struck with a want of proportion between the superior and inferior parts of the body, and cannot fail to remark the singular attitude assumed.—In fact, the trunk of the body is well developed whilst the inferior members are short and diminutive. With regard to the attitude, the superior part of the trunk is carried backwards, so that the lumbar portion of the vertebral column projects exceedingly forwards, and is very hollow posteriorly; the pelvis is situated almost horizontally upon the thighs. Persons thus affected do not touch the ground but with their toes in walking, a circumstance which results evidently from the transposition of the ilio-femoral articulation.

The manner in which walking is performed might lead one to think that running or leaping must be extremely difficult. However, it is not so; in this kind of locomotion the energy of muscular contraction, and the rapidity with which the weight of the body is transported from one member to another, render almost imperceptible the defects produced by insufficient depth of the cotyloid cavity, or want of firmness in the situation of the head of the femur. One remarks in such, it is true, when running, a greater exertion in balancing the superior parts of the body, a greater circular movement of the pelvis, in short, a more laborious effort in transferring the weight of the body from one limb to another; but any degree of painful effort perceptible in running disappears, in a remarkable manner, in leaping. Notwithstanding this, a locomotion so laborious seldom permits the individual to make long journeys, on account of the friction of the head of the femur, the inconvenient balancing of the body, and the great efforts of the muscles; which quickly induce fatigue.

One circumstance, which puts beyond doubt this explanation of the infirmity, is, that in the horizontal posture of the body, one can at pleasure lengthen or shorten the limb affected, either by slightly drawing it out, or pushing it back towards the pelvis; or, if we take the crest of the ileum and the summits of the trochanters for the points of comparison, one can easily perceive a displacement of the head of the femur, extending to one, two, or even three inches, according to the size of the individual.

Although this luxation is important of itself, yet it is more so on account of its diagnosis; for it presents all the signs of that which is the consequence of a disease of the hip joint—with which it has frequently been confounded, so that individuals have been made to undergo the treatment required for such diseased affection of the joint, who had only this original defect in their conformation.

From such an error in diagnosis, M. Dupuytren has seen persons constrained to keep their beds for several years, who were affected with this congenital luxation. He has witnessed others, who had to bear the application of leeches without number, of blisters, of cauteries, and

especially of moxas. He has seen amongst other victims of this mistake, a young girl who had been forced, by a preposterous madness, to endure the application of twenty-one moxas around the hip—and, as we may well imagine, without the slightest change produced by these useless and barbarous applications. "I have also seen (says the Baron) a nurse whom the disconsolate parents accused of having, by carelessness or brutality, produced an accidental luxation in an infant committed to her care, who came into the world with this defect of conformation. I have seen a case more extraordinary still—it is that which the victim of an atrocious assassin presented. The body of this unfortunate, who was named Autun, mutilated, disfigured, and enclosed in a sack, remained unknown in spite of the most active scrutiny, until the malformation in the hip, which I pointed out to the officer of justice, assisted in leading to the recognition of the body. The history of this cripple, carefully scrutinized, gave us to know, that he had never experienced any luxation of the hip; that he had come into the world with this defect, which had contributed to identify his body, notwithstanding the horrible mutilations, by which the assassin had hoped to prevent the recognition of his victim."

The absence of all swelling, abscess, and cicatrix; the simultaneous existence of a luxation on either side, and the progressive advance of the symptoms with advancing age, are all diagnostic marks in this disease. It is observable, also, that the crossing of the limbs takes place earlier, and is greater in females, on account of the greater width of the pelvis, by which the heads of the bones are separated by a larger space.

It is rare that we have an opportunity of ascertaining the state of parts by dissection. M. Dupuytren has, however, examined some cases of it. The muscles at the top of the thigh, whose action had been most impeded, he found reduced to a sort of fibrous or yellow tissue, in which no vestige of muscular structure was visible. The superior part of the femur was natural, excepting the internal and anterior side of the head of the bone, which had lost, in some degree, its rounded form, and become flattened by constant rubbing. The cotyloid cavity was either entirely wanting, or presented only a small irregular bony projection, in which no trace was to be found of articular cartilages, of synovial capsule, or of the fibrous margin, which is surrounded with firm cellular tissue. Once only, he found the round ligament of the joint very much lengthened and flattened by pressure of the head of the femur.

What can be the cause of a displacement occurring, so far as we can perceive, without disease, and without violence? Is it owing to some malady happening to the fœtus in utero, and cured before its birth? Can it be the result of effort, or of violence which could make the head of the femur escape from its cavity; and can the cavity be obliterated without any disease, merely from remaining unemployed and useless? Can Nature have forgotten to hollow out a cavity for the head of the femur—or can this cavity, formed by the union of three bones, have remained imperfect from defect of evolution of the osseous structure?

M. Dupuytren does not present us with any solution of these questions; and with regard to the remedies, these can only be of a palliative kind. The tendency of the pelvis is to sink down between the heads of the bones; and the indication in the treatment is to prevent, as much as possible, the weight of the body from pressing on bones, the heads of which have no cavity to support them, or prevent them from ascending, as they sometimes do, to the crest of the ilium. Therefore, it is necessary to advise rest, which should be taken in a sitting posture; as in this position the weight of the body falls on the tuberosities of the ischia, and the femora are relieved. Hence it is proper, also, to counsel such as have to earn their livelihood, to choose some trade which they can follow in a sitting posture.

With regard to alleviating the inconveniences arising from this affection, the experience of M. Dupuytren has only furnished him with two means of obtaining this end. The first consists in the daily use, excepting when counter-indicated by perspiration, or the catamenial discharge, of baths by repeated immersions of the whole of the body, including also the head, which is to be defended in the usual manner. The immersions are to be made in common or in saline water, only it must be perfectly cold, and the patient must continue in the bath during several minutes—not more.

The second remedy consists of the use, at least during the day, of a girdle which embraces the pelvis, and which is adapted to the large trochanters, keeps them at a regular height, and forms a solid junction of these loose and ill-assorted parts, preventing the continual vacillation of the body on articulations destitute of cavities.

"This girdle ought to be made according to certain rules, so as to fulfil the purposes required. It ought to rest on the contracted part of the pelvis, between the crests of the ilea and the trochanters. This girdle ought to be well stuffed with hair or cotton, and to be covered with doe-skin. The heads of the trochanters ought to be partly lodged in depressions in the girdle, which must be fixed to the pelvis by straps and buckles, passing around the body in various directions.

Although M. Dupuytren has never succeeded in completely removing the symptoms by these means, yet he has materially alleviated the inconveniences occasioned by the malady.

In the conclusion of the Memoir, he remarks, with regard to the number of cases of this disease, that he has met with twenty-one in eighteen years.

PATHOLOGY AND PRACTICE OF MEDICINE.

On two New Species of Gravel.—M. Majendie has, in one of his works, pointed out the relation which exists between the quality of the ingesta and the nature of the constituent principles of the urine.

* Revue Medicale. Oct. 1826.

He has also shown the connexion existing between the chemical character of the urine and the nature of the particles of sand which are passed from the urethra. The red gravel, which is invariably formed of uric acid, and is highly painful to the subjects of it, is (like gout) never found but in those who are enormous eaters of animal food. The excess of urea generated in these persons disposes to the formation of urate of soda in the articulations, that is, to gout as well as gravel. M. Majendie has brought forward some new facts in support of his theory. One in the case of an epicure, who, being charged with a political mission to a country remarkable for the pleasures of the table, after having indulged to excess, thought to remedy any evil that might occur, by eating every morning a large plateful of sorrel. After persevering in this course for twelve months, this political epicure experienced very severe pains in his kidneys and ureters, which were followed by the expulsion of a stone from the urethra, of one half inch in length, and one sixth of an inch in thickness. The stone was of an orange colour, and very hard. It was fonnd to consist almost entirely of pure oxalate of lime. It is evident that the oxalic acid, contained in such quantity in the sorrel, had been the originating cause of the stone.

M. Majendie has made known another species of gravel, the origin of which is not so evident. In the disease which accompanies it, the deposit in the urine is sometimes a powder of a white colour, and very fine, mixed with a large proportion of small hairs, the length of which varies from one sixth to one twelfth of an inch. At other times the gravelly particles are whitish, unequal, and of so little consistence, that they break between the fingers without any separation of the small fragments which are held together by these small hairs, and remain united in a kind of cluster. These hairs can be separated by maceration. M. Majendie has given the name of the *hairy gravel* to this species of the complaint. The constituent principles of this kind of gravel have been ascertained by M. Peletier to be phosphate of lime, with a small portion of phosphate of magnesia and uric acid. M. Majendie attributes the phosphate of lime also to consumption of animal food in immoderate quantity. With regard to the hairs, he confesses his entire ignorance how they can originate. This physician recommends in such cases an exclusive vegetable diet and the employment of alkalies; and in terminating his memoir on this subject, he remarks, "We may perceive what utility may result from a knowledge of the origin and chemical constitution of calculi, and of how much importance it is for those affected with stone or gravel, who become the subjects of operations, to have the calculi analysed, and to trace back their formation to their origin. *Then only can they hope to be cured of a malady of which the extraction of stone from the bladder is only a dangerous palliative*—which leaves them, as daily experience demonstrates, exposed to all the chances of relapse. This secret of-

science ought to attract the attention of physiologists and physicians.

The editors of the work from which we have made this extract agree entirely with M. Majendie in this last sentiment. "We have seen," they remark, "children who have been operated upon even to the third time for stone; besides, it is well ascertained that there exists what is called a calculous diathesis, proper to every kind of calculus, and which renders the operation of lithotomy more or less dangerous, according to the nature of these concretions. In fact Dr. Marcet has shown that in operations for stone the ratio of deaths, according to the nature of the calculus, is—

1 Patient affected with mural calculus, in.	20
1 with calculi, in which uric acid predominates, in	7
1 with fusible calculi, often mixed with triple phosphate, in	6
1 with calculi of pure phosphate of lime, or alternating with triple phosphate, in	4
1 with calculi formed of distinct alternating layers, in ...	3

The calculus of uric acid constitutes a third part of the whole number found in the urinary passages, the fusible and mural calculi together forming the remaining two thirds. We perceive by this statement that the mortality is in the ratio of the nature of the calculus; and such is the difference, that it is more than six times greater for the calculi, formed of distinct alternating layers, than for those of oxalate of lime, which leads us to imagine *that in the production of the former several morbific affections are united.* These facts are well worthy of the attention of the profession; there are many who already agree with M. Majendie on this point. We know several for whom we have made analyses of the calculi which had been extracted, who have subsequently submitted their patients to a treatment and regimen calculated to prevent the return of the disease."

M. Segalas, in a note on this subject, laid before the Académie Royale de Médecine, observes that he has found the use of an acidulated liquid, such as of beer, taken in large quantity, produce the discharge of calculi composed of phosphate of lime. From this he is inclined to believe that alkaline remedies are only useful in cases where the calculi are formed of uric acid; where they are composed of phosphate of lime he would have recourse to acidulated drinks.

There is a case given in the "Revue Medicale" of September, which tends to confirm still more this opinion. It is related by M. Genois, a provincial surgeon in France. The patient was fifty-two years of age, and had for several months a degree of vesical tenesmus, with severe pain in the urethra, and at the extremity of the penis. He was sounded, and it was found that there were several stones in the bladder, which were conceived to be of the size of a hazel nut. Two drachms of the supercarbonate of soda were prescribed to be taken daily in a quart of water. On the eighth day of the treatment the patient experienced very sharp pains, accom-

panied with retention of urine. The cause of the latter symptom was found to be a small calculus in the urethra, which was pushed back into the bladder with a sound. The use of the soda was continued, by which the painful symptoms were mitigated. At the end of a month ten calculi were discharged, with very little pain, by the urethra. The calculi weighed each about four grains, were of the size of small peas, of a spherical shape and smooth surface. They were, on being analysed, found to consist of uric acid, with some animal matter. The patient has since been free from all his former symptoms.

*New Cure for Dysentery**.—Mr. Hope, a surgeon of Chatham, in attending a case of dysentery, had sent some medicine to the nurse, consisting of nitrous acid and opium. The dysenteric patient who had taken the usual remedies employed in dysentery without relief, took during the night some of the medicine prescribed for the nurse, and finding great relief continued it, and was cured. This accidental discovery led Mr. Hope to prescribe it in other cases, and he has found it a most effectual remedy. In 1821 many cases of cholera and diarrhœa, occurred on board the Ganymede, of which Mr. Hope was surgeon, all of which were treated successfully with the acid mixture. In 1824, 71 cases of disorder of the bowels occurred many of which were remarkably severe, not one of the patients died, nor had any of them occasion to take more than five doses of the medicine. On board the Dolphin, in 1825, 264 cases occurred, not one of which died, and a large proportion were so soon relieved that they were scarcely absent from duty. The form in which Mr. Hope employed the medicine in these cases was as under:—

℞ Acidi Nitrosi, ʒj
Mist. Camphor. ʒvijj ℿ et adde.
Tinct. Opii Gtt. xl.

One fourth part to be taken every four hours. Sometimes syrup of red poppies was added, which seemed to improve its effects.

In chronic dysentery the dose of two ounces three times a day, is quite sufficient; the only adjunct employed was warm barley water, or thin gruel, and a diet of sago or tapioca.

The first dose was frequently rejected by vomiting, along with a considerable quantity of green gelatinous fluid. Flannel wrung out of hot water, and laid on the abdomen, and bottles of hot water applied to the feet, produced in general a profuse sweating. Mr. Hope remarks that so far from finding the same benefit from mixing the opium with nitric acid, it was not at all beneficial. This we own is somewhat surprising. Mr. Hope has not had an opportunity of trying the remedy in any case of cholera in the aggravated form in which it occurs in tropical climates.

*On acetate of Lead combined with Tincture of Opium in the Dysentery of Dublin**.—This mixture was prescribed by Dr. Burke in a large number of cases of that endemic dysentery which prevailed in several parts of Ireland during 1825. It was during the first week of July

*Edin. Med. and Surg. Journal.

that the first patients in this disease fell under his observation but the numbers attacked soon became so great as to force themselves on the observation of the profession. The increase of patients went on progressively during August and September, the disease making rapid and fatal strides over the north and north-east districts of Dublin. The symptoms ushering it in were irregular; most frequently it commenced with diarrhœa, obtuse pain in the umbilical region, tormina and tenesmus. The dejections became bloody, and the disease assumed its utmost violence. The tongue, in the majority of cases, remained clean, and there was not much thirst; pulse in general intermitting, sometimes natural, as was also the heat. The malady did not seem to Dr. Burke to be contagious. Bleeding was not found beneficial. The form in which Dr. Burke prescribed the acetate of lead and opium, was

℞ Acetat. plumbi, gr. iv.
Aq. Destillatæ, ʒ ii.
solve et
Solutioni adde tinct. thebaicae, ʒ ij.
Half an ounce to be taken every fourth hour.

We observe that the acetas plumbi in combination with opium has also been advantageously employed in America.

Treatment of the Cholera of the East.—Mr. Henderson, who has adopted a new mode of treatment in this very fatal disease, assumes the existence of a poisonous matter in some part of the intestinal canal to be its cause. This poison he conceives must either be swallowed, or be secreted by the intestines, or by the liver, spleen, or pancreas; and his plan is to expel this as quickly as possible, which he does by castor oil. Having placed the patient on his back with his head particularly low, he commences with one and a half ounces of the oil, and continues giving one ounce every twenty minutes until the bowels are freely opened by it. The patient is kept in this position by force until after the operation of the medicine, and not allowed to stir. If vomiting should, notwithstanding this take place, a few drops of laudanum are given, but the less of it the better. Stimulants may be given after two hours, not however before the oil has passed through the body. The after treatment is keeping the bowels gently open and giving gentle stimulants. The bowels of the natives of India in this disorder are so inactive, that at first it often requires half a pound of the oil, or more, to produce any effect.

The treatment of Mr. Henderson, according to the testimony of some of his brethren, as well as from his own account, appears to have been remarkably successful. The practice of preventing medicines from being vomited by keeping patients on their back by force, and thus precluding the efforts and aid of the abdominal muscles in the inverted action of the stomach, is worthy of the attention of the profession in this country, and may, in some cases, be found useful, although the necessity for such harsh measures is happily seldom necessary.

Contagious nature of Erysipelas, and its connexion with a species of Cynanche.—It has been occasionally remarked, that a severe affec-

tion of the throat was apt to occur amongst those who are much with erysipelatous patients. This has lately fallen under the notice of Dr. Stevenson, who has described the disease, and who conceives it to be an erysipelatous affection of the fauces, spreading occasionally to the adjacent parts, in different directions.

"The febrile symptoms by which it was ushered in were generally severe, even in the milder cases; very full and frequent pulse; severe pain of head and back; restlessness and great heat of surface. The period at which the affection of the throat came on, after the accession of the fever, varied from the second to the sixth day. It commonly began with a red or purplish blush, more or less extensive, over the velum pendulum and uvula, accompanied with very little tumefaction, but with considerable pain in swallowing; often, after a few days, excoriation of the inflamed surface followed, with superficial ulceration, which at times soon healed, but at other times spread, and discharged a good deal of purulent matter. In many cases the disease terminated without extending farther than the parts mentioned, but in a few it spread to the larynx, producing a state of respiration very like that of idiopathic croup. In others, it extended to the pharynx and œsophagus. When the last became affected, fluids, and even solids, could be partially swallowed without much apparent difficulty; but after a few seconds, pain was felt in the course of the gullet, an inverted action began, and they were wholly or partially returned by the mouth. In some protracted cases, glandular swellings appeared in the neck, which suppurated externally.

"This disease was readily distinguishable from cynanche tonsillaris, by the want of swelling, by the redness being more diffused, and by the pyrexia being generally greater than could have been expected from the degree of local affection. From croup, it was distinguished by the larynx being affected in a small proportion only of the cases, by the inflammation not commencing there, (at least in any case which came under my observation) and by the age of the patients. From scarlatina, it was distinguishable by the absence of cutaneous eruption, and by its attacking persons who had already had that disease.

"Copious and repeated bleeding, with brisk purgatives, and, in every case where the throat was severely affected, the application of a large number of leeches to the neck, appeared to me to be the mode of treatment which was most successful. All the cases that came under my management, both of the common erysipelas and of the affection of the throat, were treated in this manner. I have stated the event of all those detailed, and it affords a fair specimen of the general results of the cases which came under my care."

Case of Epilepsy cured by Small-pox.—In the course of a variolous epidemic, which prevailed in 1820, at Basingfield, Dr. Stuede* had

* Bulletin des Sciences Med. 1826.

occasion to observe a young girl, seven years of age, who had been subject, during five years, to periodical epileptic convulsions, and who was delivered from them by an attack of variola, which ran its usual course in this patient, and assumed a very mild character; after which she was no longer the subject of epilepsy. Several examples of this kind are on record, and experiments have also been tried in some hospitals, by inoculating with variolous matter the epileptic patients, but hitherto without success.

Epilepsy cured by Laurel Water.—We have a new remedy, proposed for epilepsy, by Dr. Muller*, namely laurel-water. It was administered to a young girl who had been long affected with this disease, and whose mind and body had been reduced to an equal state of imbecility. The disease had been treated by a host of remedies, and by copious bloodletting; by which, in all probability, the complaint was exasperated. Dr. Muller having found much advantage from the administration of laurel-water in several nervous affections, prescribed it for this patient, in the dose of twenty drops in 24 hours. After the first ounce had been taken the convulsive movements of the limbs had ceased. He proceeded increasing the dose by two drops each time until eighty drops were at last given, and after three more ounces had been taken, the epileptic attacks ceased to return, aed the patient recovered entirely her health and faculties.

Cherry-stone in the Bronchi.—Dr. Webster, in the "Medical and Physical Journal," relates the case of a boy who had swallowed a broken cherry-stone. Being frightened at the moment, it slipped into the trachea, and occasioned a violent fit of coughing, with sense of suffocation. He had also severe pain, and a slight swelling at the upper part of the trachea. These symptoms remained during the night, and in the morning he felt as if it had descended into the chest.

Twelve days after this the patient came uuder the care of Dr. Webster; the symptoms still continued, or were rather more aggravated, and there was a darting pain under the sternum.

From examination with the stethoscope it appeared that the foreign body was situated in the left bronchus at the bifurcation of the trachea, obstructing almost entirely the passage of air into the left lung. Taking advantage still further of the diagnostic facilities afforded by the stethoscope, Dr. Webster found that the lung, although collapsed, was sound. By percussion on the left side of the chest, a deaf sound was perceived, but in the right cavity every thing seemed healthy. There was a constant palpitation of the heart. By occasional moderate bleedings and the application of leeches, together with a mixture containing squills and tartarized antimony, the iuflammation was kept in check. The symptoms,

* Archiv für Medic. Erfahrung. p. 136, 1826. Journ. der pract. Heilkunde.

however, varied little till the sixty-eighth day. The cough, though alleviated, had never left him, and he was so weak as to be unable to move; the pulse was constantly quick, nnd he had some shivering, indicating the formation of matter,

The stethoscope was frequently employed to ascertain the condition of the lungs, and on the thirtieth day the report was—"On percussion, and on applying the cylinder the air appears now to pass more freely into the left lung, particularly iuto the upper lobe; but the lower one is still further collapsed, which would lead to the supposition that the stone has descended lower into the bronchi, and by thus freeing one of its branches, the air is allowed to pass more freely than it did into the left lung."

On the morning of the sixty-eighth day, the patient felt as if about to be suffocated; he had pain extending to the left shoulder and upper part of the neck, followed by sickness and violent fits of coughing, whereby he expectorated more than a pint of fetid pus, mixed with streaks of red blood, and in the midst of which was found the cherry-stone. Great exhaustion followed this effort, and for an hour afterwards life appeared to be extinct, but he gradually recovered, and although he spit pus copiously for a week, he was able to walk out on the twentieth day, and soon after left town perfectly convalescent.

*Sulphate of Quinine administered by Friction.**—M. Pointe, a physician of Lyon, having observed irritation of the stomach frequently produced by the internal exhibition of the sulphate of quinine, conceived the idea of administering it by frictions on the gums and mucous surface of the lips. His Memoir contains a list of nine cases of intermittent and remittent fever, which were cured by this method; the dose was from four to eight grains, morning and evening.

The only inconvenience experienced from this form of administering the medicine, was its extreme bitterness, which was corrected by combining with it some other substance. Mr. L. Villermay also mentions the case of a child affected with gastro-enteritis, in whom the taking of the sulphate of quinine by the mouth always excited great irritation of the alimentary canal, so that he was obliged to have recourse to the administration of it in clysters, and by friction upon the skin.

Kirronosis, or Yellow Discoloration of the Fœtus.†—This disease has lately been detected in the human embryo, by M. Lobstein, Professor of Medicine at Strasburgh. It affects chiefly the serous membranes, which are tinged of a beautiful golden colour. It might be termed internal jaundice, as it pervades the peritoneum, the pleura, the pericardium, and the arachnoid membranes, leaving untouched the cellular parenchymatous tissue of organs, and the subcutaneous tissue, and the skin itself, all which are the usual seat of jaundice.

M. Lobstein first discovered this disease in two embryos, of five months, in whom the peritoneum presented this golden colour, especially

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* Revue Medicale, Octre. 1826.

† Repertoire Generale d'Anatomie. Paris, 1826.

in that part which lines the posterior walls of the abdomen; excepting this, the abdominal viscera were in their natural state. In another embryo the pleura of the chest was also affected, together with the pericardium and surface of the heart. The thyroid gland and neighbouring parts were also coloured, and in the head the dura mater and arachnoid presented the same appearance.

The same disease was met with in twin embryos, of twelve months; in one of which the serous membrane lining the abdomen, covering the viscera, was yellow, and in both of them a distinct yellow streak was observed passing down the pleura, on each side of the vertebral column. An embryo of three months presented this yellow disease in the abdomen; in the posterior part of the chest there were also seen a stripe of bright yellow on either side of the spine; that on the right side ascended into the neck, accompanying the right carotid.

On carrying his researches farther, M. Lobstein found that this colour was not peculiar to the serous membranes, but that it pervaded even in a still more intense degree the spinal marrow, and was not confined merely to its envelopes, nor its external surface, for it reached to the interior of the medullary substance, On examining the spinal marrow with the microscope, it appeared composed of small particles, of a lemon colour, mixed with a white pulpy matter, just as if one had mingled a fine golden powder with soft semi-transparent jelly. The yellow stripes that he had observed on each side of the spine, he found, on a more minute investigation, to be the great sympathetics, whose natural colour had been changed to that of a lemon.

This yellowness of the serous membranes and nervous pulp is not the effect of any foreign body; it cannot be washed out, and in an embryo, which has been preserved in spirits for seventeen years, is as bright as ever. It does not arise from any layer of matter or sediment, but is inherent in the tissue, and yields to no agent excepting the rays of the sun, which no colour, vegetable, or animal can resist.

M. Lobstein is ignorant of the *cause* of this yellow colour; it has only been found by him in the embryo and fœtus; it seems to belong to the nervous system; it does not seem owing to *bile*, which at that age is not secreted; nor can it be attributed to inflammation.

This disease is distinguished from an organic affection which M. Lobstein met with in a fœtus, full grown, born dead, and dissected a few hours after birth, in which was found an infiltration of a yellow fluid in the cellular tissue of the skin, of the muscles, and of the viscera, following a complete disorganization of the cerebellum. The inspection was also curious on account of presenting, seven hours after death, remarkable irritability and contractility of the muscles*.

On the Cause of the Yellow Colour in the Icterus Infantum†.—The subcutaneous cellular tissue, and the fluids which are tinged

* It is necessary to distinguish from Kirronosis, the cirrhosis of Lænnec, which term was given by him to a morbid production of the liver, formerly thought to be scirrhus, which frequently terminates in ascites.

† Journal de Chimie Med. Juin, 1826.

yellow in this disease, have been analyzed by M. Lassaigne, who has found that the colour is caused by a yellow matter, which resembles bile in many of its qualities. It forms, for example, a green when mixed with the caustic alkalies; when acids are added it is precipitated dark green. Nitric acid first changes it to green, then to blue, and lastly to violet. Still M. Lassaigne considers it doubtful whether these substances are the same, for he has found none of the other properties of bile, either in this substance, or in the yellow serum, with which the cavities are filled, and the cellular tissue infiltrated; and concludes that the yellow colour does not arise from the absorption of bile.

Deafness.—P. Aug. Frener, the author of a work * on deafness in which he has shown a profound knowledge of his subject, gives it as his opinion that nervous deafness is the diminution or abolition of the faculty of hearing, in consequence of an idiopathic and primitive, or sympathetic and secondary deranged affection of the pulp of the auditory nerve. It has its seat either in the parts which propagate the sound, or in those which augment its intensity: in the latter case it is owing either to an arethismal affection, or to an organic torpor.

Transposition of the Viscera of the Thorax and Abdomen†.—In a female, forty years of age, who had entered St. George's Hospital on account of disease of her right ankle, and who subsequently died of disease of the lungs, the following morbid appearances and malformation presented themselves on dissection:—

"The lungs of the right side were divided into two lobes; those of the left into three. The apex of the heart was turned towards the right. The aorta was given off by the right ventricle, which was the most muscular; and the pulmonary artery by the left. The distribution of the veins corresponded; the left auricle receiving the blood from the two venæ cavæ, and the right from the pulmonary veins. The arch of the aorta was turned from the left to the right, and the first great branch given off by it was the common trunk of the carotid and subclavian of the left; the next, the carotid of the right; and the third, the subclavian of the right. The aorta descended to the right side of the spine: and, in the abdomen, had the cava ascendens placed on its left.

"The viscera of the abdomen were transposed in a similar manner. The liver was situated in the left hypochondriac region, with its small lobe to the right, and its great lobe to the left side. The stomach and spleen were on the right. The mesentery began on the right side. The ilium terminated in the cœcum on the left side; the transverse arch of the colon passed from the left to the right; and the sigmoid flexure of the colon descended on the right to its termination in the rectum."

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* Ueber die Nervoese Taubheit. Bei P. Aug. Frener, D.M. Wurzbourg, 1823.

‡ Medical and Physical Journal, Oct. 1826.

MATERIA MEDICA AND PHARMACY.

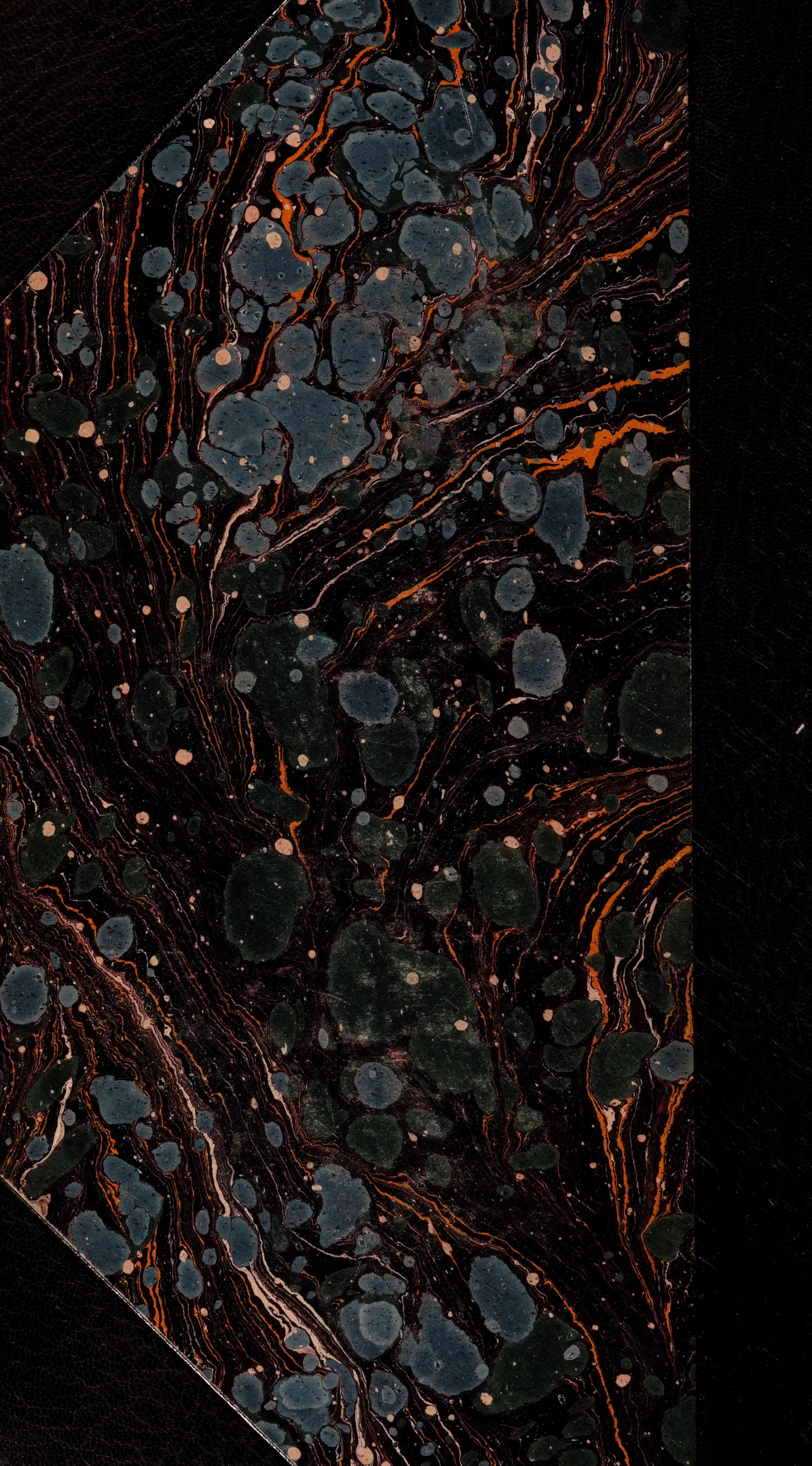
Employment of Chloride of Lime as an Antiseptic, and for the Destruction of Putrid Effluvia.—This substance, well-known in this country, as the bleaching powder of Mr. Tennant, was employed at Paris four years ago, to remove the effluvia of infectious disorders and of putrid substances, by M. Labarraque, an apothecary in Paris. His first experiment was made at the Morgue, on one of the dead bodies placed there as usual to be claimed by the relatives. Although a high degree of putrefaction existed, yet in one minute after the application of this substance, the smell was almost destroyed, and by another washing, it was entirely removed. This effect has been repeated in numerous other instances of effluvia, arising from a variety of causes, and the results have been so favourable, and regarded as of such beneficial consequence by the Parisian police, that a report on this antiseptic, lately delivered by Professor Marc, has been adopted by the French Government, who have recommended its use in all their hospitals.

The mode of using this substance is, by dissolving half a pound of it, viz., the chloride of lime, in about twenty or more pounds of water; this at least was the proportion in which it was applied to the putrid body at the Morgue; and it has been remarked by the superintendant of that place, that bodies treated with this solution remain afterwards free from putridity for a longer time than others. Hence, it has been used in the dissecting rooms in Paris, and more lately in London, as a means of preserving subjects. It has been also employed as a remedy by the French surgeons in cases of wounds and tumours, in which any septic tendency existed; such as in sloughing and phagedenic ulcers, and hospital gangrene, and is also applied, more or less diluted, as a lotion in a variety of cases of ulceration, whether common or severe.

It is, however, chiefly on account of its quality as an antiseptic, and of its power in disinfecting hospitals, houses, and clothes, that we must regard this chemical substance as a valuable addition to the Materia Medica.

Quick Method of preparing Mercurial Ointment.—A process for making this ointment in a very rapid manner has been adopted by M. Chevalier. It consists in agitating mercury in a glass bottle, with melted lead, at a temperature of 60 deg. Reaumur, and afterwards triturating the mixture in a heated iron mortar. In this manner an ointment may be procured in less than an hour, which formerly could not be obtained but by trituration continued for several days.

Literary announcement.—Preparing for Publication, an Introduction to Comparative Anatomy, Translated from the German of Professor Carus, of Dresden, with plates.

We look forward with great interest to the appearance of this work, as much on account of the ability and peculiar qualifications of the commentator, as of the high character of the original author.

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